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ART. I.—*On the Use of Large Doses of Opium in the Treatment of Fever, Inflammation, and Dysentery.* By ANSON G. HENRY, M. D., of Springfield, Illinois.

I propose in as brief a manner as possible, in the following communication, to call the attention of the profession to the use of large doses of opium, (and by large doses, I mean from four to six grains,) *as the main curative agent, in the first or forming stage, of Fever, Inflammation, and Dysentery.*

As early as the year 1837, I made an effort under the patronage of my late lamented friend, Doctor John P. Harrison, of the Ohio Medical College, to call attention to the safety and efficiency of large doses of opium in fever; and with that view, reported for publication in the Western Medical Journal, at Cincinnati, several cases of fever which I had treated, with very happy results, with four grain doses of opium. Dr. Harrison discouraged

their publication, on the ground that it would not be prudent or politic to put at hazard my medical reputation by the promulgation of doctrines so directly at war with the well-settled theories and practice of the profession. This rebuff from a very learned and highly esteemed medical friend, not only induced me to doubt the correctness of my conclusions, although founded at the bed side of my patients, but rendered me very timid in the use of the large dose, until all the usual remedies had proved unavailing. But its use under these most unfavorable circumstances, so frequently rescued my patients from a state of extreme peril, and placed them in one of safety, that I could not avoid the conviction that it was a remedy of very great power, and I began to venture upon its use the moment dangerous symptoms showed themselves. In 1840, I commenced its use as my main remedy, having become fully satisfied that no danger was to be apprehended from an over dose of opium, or from congestion of the brain. I found that in precisely similar cases, where the dose of the books had evidently aggravated the cerebral symptoms, increased dryness of skin, and failed to relieve permanently the patient, a large dose seldom failed to produce full and permanent relief. I became satisfied that the doctrine so generally, and assiduously inculcated and practiced upon by the profession, viz: that the use of opium was to be carefully avoided, in all cases of fever where there was determination to the brain, did not apply to the large dose, however well it might apply to the largest dose recommended by medical writers, as safe and admissible; and I came to the conclusion, that the mischief so generally dreaded or experienced, was justly attributable to the insufficiency of the dose used.

I was well aware that many articles of our Materia Medica could be made to produce opposite, or very different effects, by regulating the dose. Dr. Cartwright had very satisfactorily demonstrated that this principle

applied to quinine; and long and careful observation had convinced me, that the principle was most peculiarly applicable to opium. Medical practitioners with whom I was thrown in contact questioned its utility in fever, on the ground that it aggravated the tendency to coma; and when induced by me to try the large dose, in cases where there was not only a tendency to coma, but where it actually existed in sufficient degree, as in typhoid fever, to destroy consciousness, they were surprised at the sudden and permanent relief obtained from a single dose; but so strong were their prejudices and their reverence for authority, that at first they would leave the patient with the conviction, that the remedy had been given just on the eve of a "crisis," and that he had recovered, "in spite of the opium," rather than as the result of its curative power. But I am happy to know, that those gentlemen are now warm advocates for the practice when an opiate is admissible; and are in the daily habit of giving from four to six grains, with less hesitation than they formerly felt when administering the one or two grain dose.

The large dose of opium is usually objected to on the ground that there is danger of producing fatal somnolency, especially where there is febrile excitement; but my experience is, that nothing is to be apprehended on that score, and that the large dose will not produce as much disposition to sleep as a dose of two grains.

In a paper publishsd in the Missouri Medical Journal, in the summer of 1845, I submitted the following propositions:

1st. That a four or six grain dose would produce less disposition to sleep, than one and a half or two grains.

2d. That ten grains of calomel, combined with four or six of opium, would produce a better alterative effect in fever, than thirty without the opium, provided they were both retained in the system the same length of time.

3d. That the large dose produces less constipation of the bowels than small doses.

Why this is so, it is not my purpose to inquire at this time. Those who question the truth of the propositions have only to try the experiment, to be convinced of their truth; my object at present is to state the simple results of my observations and experience.

I regard opium, when used in the way I propose, as the most safe and efficient remedy in all forms of continued fever, to be found in the whole list of our remedial agents, calomel not excepted. I would not be understood as relying upon it exclusively, in the treatment of fever or any other form of disease; but I do mean to say, that instead of relying upon calomel as my main remedy, as I was in the habit of doing in the outset of my professional career, I now regard it as an important auxiliary remedy, and opium as my "sheet anchor." I do not hesitate to affirm, that I can accomplish more in practice, in all forms of fever, by opium, quinine, &c., without mercury, than was ever secured by the old mercurial plan of treatment; and the difference in speediness of cure, and saving of human suffering is immense.

In lookidg over my journal of fever cases, treated on the mercurial plan, I find that the average number of days' attendance was about eight; and the mortality, one in twenty-seven. Under the opium plan of treatment, the average number of days' attendance has been about four; and the mortality not one in ninety. This estimate includes all the fever cases that came into my hands, in a general town and country practice; and it also includes all the various forms of fever, from the mildest bilious remittents, to the most malignant forms of congestive and typhus.

The following case will illustrate my mode of treatment, better than I can do it in any other way.

I was called on the evening of the 5th of September

last, to see Mr. ———, aged about thirty-seven years, a carpenter by trade, who who had usually enjoyed robust health. He had been more or less indisposed for several days, but did not take his bed until the morning of the day I saw him. I found him with high fever, skin hot and dry, tongue heavily coated, red and glossy at the end, and complaining of violent pain in the head and back, distressing nausea, with tenderness over the stomach and bowels. He had been freely purged during the day, having taken a dose of Cooke's pills in the morning; consequently I gave him four grains of opium, and twelve grains of calomel, (without preceding the dose with ipecac and calomel, for the purpose of freely evacuating the stomach and bowels, as I am in the habit of doing,) and directed him to drink freely of hot sage tea. Found him on the the morning of the 6th, much improved in appearance; said he had rested well during the night; perspiring very freely. Fever was beginning to rise. I directed salts and senna to be taken during the day, until the bowels were freely moved, and left him the same dose to be taken at bed time. Found him on the morning of the 7th, entirely free from fever. The pain in the head and back had returned with fever, but with less intensity, but had entirely passed off in about an hour after he took the opium and calomel. The salts and senna had operated well the day before. Tongue still coated but moist. I directed five grains of quinine to be given at intervals of four hours, until three doses had been taken. I found him on the morning of the 8th, decidedly convalescent. Had no return of fever the day before, and expressed himself as feeling quite well. His tongue had cleaned off, and presented that peculiar tremulous motion indicating slight ptyalism; gums slightly swollen and tender to the touch. I directed a Seidlitz powder to be taken every hour, until the bowels were freely moved. Found him on the morning of the 9th, sitting up and doing well, with less

indications of ptyalism, than the day before. In the course of three or four days he was at his work as usual.

I have selected this case because it was one of more than ordinary severity for a case of our endemic remittents; and also for the reason, that the cerebral affection constituted a prominent feature in the case. The result shows that determination to the head does not forbid the use of large doses of opium.

It may be urged that in this case, the cure was more attributable to the calomel than to the opium; but I am satisfied the fever would have continued without intermission together with the pain in the head and back for days longer, and perhaps have terminated fatally, if the opium had been omitted. To demonstrate this, I have in similar cases omitted the calomel with nearly the same results; the only difference being, that the patients did not get up so soon, and were more liable to relapse, but I did not fail to secure an intermission with two or three doses. But in my opinion, the calomel ought not to be dispensed with, except in cases where there is danger of profuse ptyalism with the most cautious use of it.

While I am satisfied that the large doses of opium can be used both with safety and efficiency in cases attended with cerebral affection, I am equally well convinced that they are entirely inadmissible where actual inflammation exists. We may have very serious *affection* of the brain and spinal chord, without inflammation. It may well be doubted whether we ever have inflammation without its being preceded by a stage of irritation, and hence the importance of allaying the irritation, more especially in fever, before inflammation is developed. In our typhoid forms of fever, I believe the affection of the brain is most generally the result of diminished power, and is only to be relieved by sedative and stimulant remedies. It may be that it is on this principle, that a large dose of opium and quinine so generally relieves the tendency to coma, and

even coma itself, in this type of fever; or where too active depletion has been used, with a view of guarding the brain from injury.

I am not prepared to say what the specific action of a large opiate is; but I am well convinced that opium has an action altogether different from any that has been assigned to it by writers on Materia Medica. I am inclined to attribute its curative power in fever, partly to its sedative power, but mainly to its diaphoretic effects. I have been led to this conclusion by the fact, that no beneficial result is obtained in fever, until it is given in sufficient quantity to produce perspiration; and by the additional fact, that the benefit derived from its action is far greater than can be secured by any of our diaphoretic remedies, not excepting Dover's powder, which has opium for its basis. If we adopt Cullen's doctrine, of "spasm of the extreme vessels," for our theory of fever, we have a satisfactory explanation of the superior efficacy which I claim for the opium practice over all others that have been recommended.

In addition to the general satisfaction I derived, from the perusal of the very able and practical paper of Prof. Rogers, on "Carbonagogue Medication," recently published in this Journal, I feel particularly obliged to him for the satisfactory explanation he incidentally furnishes of the action of my remedy in fever. He says:

"Whatever hypothesis be entertained as to the etiology of fever, a prominent and pervading condition attending this affection, in its various forms, is an arrest or vitiation, of greater or less duration, and greater or less intensity, of the several most important secretory and excretory processes. This arrest or impairment is universally recognized as a potential part of the febrile combination; it constitutes a link in the chain of morbid phenomena, the severance of which generally resolves the difficulty. In what consists its importance? The physi-

ology of these secretory and excretory processes explains at once the noxious influences of their pathological aberrations. *They are the scavengers of the system, and when they cease their labors, poisonous and polluting accumulations must occur.* Of these accumulations, the product of the natural waste of the body, *and possibly the poison of fever itself*, carbon constitutes an important, if not the chief element."

I have italicised a portion of the foregoing paragraph, by way of calling attention to the doctrine hinted at, as having a most important bearing upon the action of the remedy I propose, for meeting the great leading indication in fever.

It will be borne in mind that I have fixed the minimum and maximum dose, at four and six grains. In the generality of cases, four grains will fulfill the indication; but in cases where opium has been frequently resorted to by the patient as a household remedy, five or six grains will be required. I have given the largest dose hundreds of times, without having in any one instance, to my knowledge, done mischief by it. It may frequently occur, that patients will breathe rather heavily for an hour or two, but the perspiration will not fail to remove all unpleasant symptoms. Where the dose is given at night, there will be more or less nausea for an hour or two in the morning, a thing hardly worthy of notice, but it may be avoided entirely, by giving a single grain of opium eight or ten hours after the large dose, so as to let the system down gradually. I greatly prefer the solid opium to any of its preparations; even were it possible to determine the strength of the preparations of morphine, I would not use them in large doses, for I believe they have a different action from opium.

I cannot too strongly enforce upon those who may feel disposed to give the remedy a trial the great impropriety, if not unfairness, of delaying a resort to it, until they have

exhausted all their favorite remedies. It may be given just as the case is on the eve of terminating in fatal coma from effusion, and the remedy would run the risk of being held responsible for an effect that depended entirely upon the disease. Let it be given early in the disease, and there will be nothing to be apprehended from coma, and comparatively little from a fatal termination.

In Inflammation, opium can only be used advantageously in the irritative, or forming stage.

I am indebted to the late Professor Barbour, of Saint Louis, (who adopted this plan of treating fever at my suggestion,) for a very valuable hint in regard to the use of opium in acute inflammation. He was in the habit, up to the time of his death, of administering the large dose before opening a vein in the arm, with a view of continuing the sedative effect of the bleeding. In this way, a single bleeding, with a large opiate, you will cure the most violent attacks of Pleurisy, Hepatitis, Gastro-Enteritis, Puerperal Fever, &c. In the latter most frightful disease, it will relieve every alarming symptom, and very often without a bleeding.

In the treatment of Dysentery, opium in large doses, may be regarded as approximating very nearly to a specific; for I am not aware of its ever having failed in my hands to arrest the disease, when resorted to at the onset of the attack, or before lesion had taken place in the bowel. The following case will show my mode of treating it:

In September last, I was called to see Mr. ———, a laborer, aged forty years. He had been attacked the evening before with violent griping of the bowels, distressing tenesmus, with frequent evacuations of bloody mucus, and high fever. I directed enemata of salt and water, which freely evacuated the bowels. I then administered five pills composed of one grain of opium, and three of calomel each, and directed him to drink freely of hot tea.

I called to see him two hours after, and found him entirely free from pain or uneasiness of the bowels, and perspiring freely. I left him three gr ins of opium, to be given in the event of a return of the dysenteric symptoms. Saw him twenty-four hours afterwards. He had remained quiet without taking the opium. I directed him to take a dose of oil, in the event of his bowels not being moved in the course of five or six hours. Called the next day and found him apparently well. His bowels had been moved the day before, without the aid of the oil. I directed him to remain quiet for a day or two, living on tea and toast, and discharged him cured. Two days after he was at his work, and had no return of the disease.

After evacuating the bowels with a saline cathartic or enema, I aim to give a dose large enough to quiet the bowels at once, and I regard it as very important, that they should be kept quiet for twenty-four, or thirty-six hours, or until all disposition to a return of the dysenteric symptoms has subsided. If you give a cathartic at the end of ten or twelve hours, (as some of my medical brethren here, who have adopted the large opiate, are in the habit of doing,) you are almost certain to re-produce the disease, and involve the necessity of starting anew with your treatment. I regard this as a very great error, and one that frequently proves fatal. The principal reason urged in favor of the practice is, that you incur the risk of a sore mouth, if you withhold the cathartic. But I insist that you had better risk a sore mouth, than the life of your patient, or at best, days of unnecessary suffering. There is however, no necessity for incurring the risk of either. If your patient is very impressible to calomel, give less, or omit it altogether. I prefer giving it with the opium, not only for its action upon the liver, but for its cathartic effect after the influence of the opium has passed off. Still, I am fully satisfied you can cure the disease with opium, without the aid of mercury in any form.

The opium plan of treatment, will be found quite as efficacious in all our typhoid forms of fever, as in bilious remittents. When resorted to in the commencement of the disease, it will seldom fail to arrest its progress, or place it entirely within your control. In that most malignant form of fever, congestive typhus, where the brain seems to be overwhelmed by the force of the poison, at the very onset of the attack, a large opiate combined with quinine, is the only remedy in my opinion, entitled to confidence. Bleeding and other evacuant remedies, so far as my observation extends, fail to give relief, and the loss of time places the patient beyond the reach of all remedy.

I trust I have succeeded in making myself clearly understood; and I indulge the hope, that my readers will give the practice a fair trial, and report the results of their experience to the profession.

I deem it due to myself to assert my claim to the priority of whatever may be valuable in this new mode of using opium. I do this now, in consequence of having noticed lately in the medical journals allusions to the use of large doses of opium in fever, &c., without the slightest reference to myself as the originator of the practice; and for the more important reason, that Prof. Drake in his reference to the practice in his valuable work recently published, gives the credit of the practice to "Merryman and Henry." Dr. Drake was naturally led into the commission of this error by the circumstance that I was connected with Dr. Merryman in the practice at the time of Dr. Drake's visit to Springfield in 1840.

November, 1851.

ART. II.—*Two Cases of Puerperal Peritonitis.* Reported by J. M. LAWRENCE, M. D., of Nashville, Tennessee; late resident Pupil at Bellevue Hospital, New York.

CASE I.—M. W., aged thirty-five years, native of Ireland, cadaverous look, was delivered of her third child, on the 21st of December, at 10 o'clock, A. M. The labor was natural and easy, lasting eight hours.

22d., 8, A. M. Lochial discharge is going on well; pulse 110 per minute; mind uneasy, and bowels not moved since delivery. Ordered castor oil, ℥ iss, which was rejected, and then gave one ounce of salts, which operated well.

2, P. M. She has had a violent chill, which is followed by profuse perspiration, hot skin, and a partial secretion of milk. Her pulse is full, beating 140 per minute; occasional vomiting and delirium. There is tenderness on pressure in the right iliac region. Gave her ten grains of calomel, with five of camphor, and one of opium. The vomiting was relieved by the free use of ice.

6, P. M. The vomiting has returned. The abdomen is slightly tympanitic, tenderness in the right iliac region much increased; great uneasiness of mind; pulse 130, and small. Bled her to approaching syncope, during which the pulse fell to 120, and increased in volume.

At 9, P. M. She is more tranquil, but the pain is intense on pressure. The vomiting is checked.

Repeated same dose of calomel, camphor, and opium, and ordered warm hop fomentation to the abdomen.

3d, 9, A. M. Rested pretty well the latter part of the night, and is more quiet this morning than on yesterday, though the abdomen is more tympanitic, and the tenderness on the surface over the iliac region is greater; pulse 130; patient has had a small discharge from the bowels. Lochia ceased. Ordered one ounce and a half of castor oil, which was rejected from the stomach; and then gave

her five grains of calomel, with two of camphor, and half a grain of opium, to be repeated every two hours.

At 2, P. M., her pulse is 120, and her condition is not improved. I applied six leeches to the hypogastrium, and followed them by warm poultices. Continued the calomel and opium.

5, P. M. Bowels were freely moved by an enema of oil and turpentine. Ordered a blister, twelve by twelve, to abdomen, which is to be dressed with mercurial ointment.

24th, 9, A. M. She is much worse; pulse very frequent and feeble; rested badly during the night. She is constantly vomiting a greenish yellow matter.

Died at 3, P. M.

Autopsy.—Intestines distended with flatus. The peritoneum is congested and inflamed to a great degree through its entire extent, though more so in the right iliac region. There is also a slight effusion of serum in the peritoneal cavity, but neither lymph nor pus. The uterus is healthy save a slight inflammation of the veins. The other viscera are normal.

Case II.—Josephine A., twenty-two years old, a native of Ireland, and of intemperate habits, was delivered of her first child, December 22d, at 2 o'clock, A. M., during an easy and natural labor, which lasted six hours. There was much anxiety of mind during and after labor.

At 11, A. M., she is doing well, but being apprehensive of peritonitis, I gave her five grains of calomel, with two of camphor, and one of opium, which is to be repeated every two hours. Also gave her a dose of oil.

At 7, P. M., her bowels had been moved freely, and the the lochial discharge was free.

23d, 2, P. M. Had a slight chill, followed by high fever, perspiration and a slight secretion of milk. She was ordered to continue the calomel and opium in half the former doses.

6, P. M. Tenderness in the right iliac region on the surface; pulse 120, and is tense; set her up in the bed, and bled to approaching syncope, taking about twenty ounces of blood. The pulse became fuller immediately, and decreased ten beats.

24th, 9, A. M. She rested pretty well during the night, having been troubled only with slight vomiting, which was checked by ice. The tenderness is increased, and the abdomen is somewhat tympanitic. Her face is expressive of much anxiety, and she is constantly tossing in bed. The lochial discharge is diminished in quanitty. Continued former treatment.

6, P. M. The tenderness and tympanitis are increased; tongue coated; respiration natural; pulse 130, and tense. I bled her again sixteen ounces, which had the effect of rendering the pulse more natural.

25th, 9, A. M. Tolerably quiet through the night; no motion from the bowels, and she complains of still more pain in the abdomen; she vomits occasionally, and the lochia has ceased. Ordered an enema of oil and turpentine, and hotbran fomentations to the belly; also, the eighth of a grain of morphia every hour.

6, P. M. Bowels moved; still vomiting, the matters thrown up now being bilious; skin is cold and wet with perspiration; pulse is very feeble and quick. Ordered brandy to be freely given, and hot bricks to the feet.

26th, 9, A. M. She is much prostrated, and still vomiting the greenish matter; the pulse is barely perceptible, and respiration labored. She died at 3 o'clock, P. M.

Autopsy.—On opening the cavity of the abdomen, I found the intestines distended with flatus; effusion of serum, lymph and pus into the abdomen, with recent adhesions. The whole peritoneal coat was injected, presenting an arborescent appearance. The cavity of the uterus had a dark gangrenous look, and fetid odor; no pus in the sinuses; the gall bladder was distended, and there

was effusion of serum into the pleural cavity, and into the pericardium.

ART. III.—*A Case of Puerperal Convulsons relieved by Blood-letting.* By BENJ. C. DRURY, M. D., of Breckinridge County, Ky.

Mrs. D., æt. about 30 years, who had borne three living children, and miscarried several times, being near another confinement, was seized on the morning of the 9th of November with a convulsion, after having suffered with headache and vomiting for a short time after waking. I found her with a hot skin, hard, bounding pulse, insensible and speechless. The convulsions recurred with tolerable regularity once every hour until blood was drawn by Dr. Board, after which the intervals were increased to two hours. During the paroxysms, her tongue had been badly lacerated by her teeth, and was much swollen. Her extremities and general surface presented a tumid appearance from distension of the blood vessels. It was at once decided that more blood should be extracted, and accordingly the patient was bled from the arm to the extent of half a gallon. When this quantity had been drawn, her face became blanched, her pulse grew soft, and the surface relaxed. After this, she had no return of the convulsions, though it was nine hours before entire cousciousness was restored. A dose of calomel was administered with some difficulty, which operated well. Labor came on in a few hours, and the lady was delivered of a large still-born child. On the 1st of December, two days after, I found her doing well, and she recovered without any untoward symptom.

It is due to Dr. George Thompson, of Tennessee, to say, that I was encouraged to use the lancet so freely in this case, by his practice in similar cases. My impression is decided, that our patient owes the preservation of her

life to the copious blood-letting, which we should hardly have had the boldness to practice but for the experience of Dr. Thompson.

December 15, 1851.

ART. IV.—*A Case of Ununited Fracture of the Tibia, of Four Years Standing successfully treated.* By W. G. WILLIAMS, M. D., of Chillicothe, Ohio.

Sometime during last winter, Mr. James Stockton brought to Chillicothe his grand-son, aged four years, to consult me in reference to a deformity of his leg.

The deformity was so great as to render the leg almost useless, and as he informed me, was becoming worse every day.

The previous history of the case as stated to me by Mr. Stockton was, that soon after birth the child appeared uneasy and fretful, crying out on the slightest motion.—On the second day a small lump, which appeared very sore, was discovered on the shin. A physician being consulted, directed them to "let it alone," telling them that it was nothing that would hurt the child. His directions were followed accordingly, nothing being done for the leg, which with very careful nursing, as he said, "got along."

When, at three years of age, the child began to stand on the leg and walk, the limb commenced growing crooked and continued to become worse until the time he consulted with me in reference to it.

On examination I found the tibia so crooked as to form very nearly a right angle, projecting outward and a little forward before the fibula, which was very much curved. So great was the projection, that although three inches above the malleolus, at each step it came within an inch of the floor, the foot resting on its outer edge.

I at once perceived that there was no alternative between

straightening the limb and cutting it off, as its condition at that time rendered it worse than a wooden leg. I informed him that it might possibly be straightened by an operation, apprising him however, that the operation was both severe and very dangerous; but nevertheless I considered it worth attempting, under the circumstances, as if (as was much to be feared) we failed to effect an union, we could then resort to amputation, which latter alternative would be best under the circumstances, and far preferable to leaving the limb in its present situation. He left me at that time undecided in the matter, but having subsequently consulted with his friends, he returned in about a month and informed me, that they were willing to submit the child to the proposed operation. Accordingly on the 18th of March, I proceeded to operate, being assisted by Dr. A. C. Johnson who resided in the vicinity, and to whose skilful management and close attention after the operation, I am much indebted for the successful result.

Having put him under the influence of chloroform, I made a longitudinal incision over the projecting angle from two and a half to three inches in length. I then carefully denuded so much of the bone as I intended removing, supposing that I could draw back the integuments so far as to enable me to complete the operation without further incision. In this however, I was mistaken, and found it necessary to make another incision on the outside of the leg, running from the centre of the first, and forming with it a T. After making this last incision, I sawed out the angle without much difficulty, taking care to remove only so much as would permit the bone to be straightened without leaving the fragments too far asunder, and being careful also to let the sections by the saw come together near the under side, without passing quite through, and without wounding or destroying the attachment of that part of the periosteum.

After removing the wedge we found that the parts of the bone could be readily put in apposition, and that no impediment existed to straightening the leg with the exception of the curvature of the fibula, which we were satisfied could be overcome by regularly continued pressure.

This having been done without wounding, or finding it necessary to tie any of the arteries, and consequently with very little hemorrhage, we proceeded to dress the limb as follows:

Having first closed the wound by a few stitches of the interrupted suture, we placed a wet compress upon it, bound it up gently, and then placing a long splint on the inside, and one on the outside of the leg, we secured them above and below the wound by a few turns of the roller. We then put the boy to bed, he being quite comfortable, and having suffered very moderately during the operation.

After remaining with him about two hours, and finding no unpleasant symptoms, I left him in the care of Dr. Johnson, with directions to see him daily, and even twice a day for some time. In consequence of the distance from Chillicothe, I was only able to see him occasionally.

Dr. Johnson has kindly furnished me with a full and minute report of the subsequent symptoms and treatment, from which I make the following abstract:

March 19th.—Slight fever and good appetite. Ordered light diet, and a dose of salts to be given at night.

March 20th.—Has been restless through the night.—Pulse 85. Salts have not moved the bowels. Ordered the salts to be repeated, and Dover's powder to be given at night.

March 21st.—Slept but little. Complains of pain in the knee. Wound suppurating. Pulse 90.

March 22d.—Pulse 80. Wound suppurating freely.—Says he wishes more to eat. Removed one of the stitches and allowed him more generous diet.

March 23d.—This day I saw him, in company with Dr. Johnson. We found much of the wound healed; there being only small openings at the upper and lower ends of the longer incision, and at the junction of the T, which were discharging pus of a good character. Appetite good. Free from fever.

From this time there was little or no variation in the treatment. The suppuration decreased. The splints were readjusted from time to time, and the pressure regularly increased until April 6th, when the stitches having been all removed, and the wound healing well, the starched bandage was applied, to the whole leg and foot, leaving only an opening through which to dress the wound. Over this opening was placed the bandage of Scuttelus, in order that the wound could be dressed without disturbing the position of the bones.

May 2d.—Dr. Johnson reports, wound all healed except a small spot about the size of a pea at the upper edge.

May 8th.—Removed a small piece of bone from the upper edge.

May 21st.—Wound now healed. The bones seem to be solid.

May 31st.—Was called to see the boy, and found him laboring under a severe attack of bilious dysentery. Pulse 104. The limb has the appearance of a large abscess forming under the wound. I removed the starch bandage and reapplied the splints.

June 2d.—I met Dr. Johnson to-day by request. We found the wound open and freely discharging unhealthy pus. Dysentery very slightly improved. Fever high.—Having carefully pressed out all the matter, and applied compresses so as to prevent its accumulation as much as possible, I bound it up. Prescribed for the dysentery acetat. plumb. and opium, &c.

June 9th.—Dr. Johnson reports patient relieved from dysentery, and discharge from wound diminishing.

July 12th.—I saw the boy again to-day, and we removed another piece of bone, which judging from its appearance and other circumstances, I believed to be an isolated portion of the callus, all of which, with the exception of this piece had been absorbed during the fever and dysentery. The leg was now quite limber, and I felt greater fear for the result than I had done at any time previously. However the wound healed readily.

July 20th.—I found the wound entirely healed. We again applied the starched bandage, so as to permit the free motion of the ankle and knee joints, and allowed the boy to walk on the leg after the starch became dry.

Aug. 4th.—Dr. Johnson writes me, "The boy walked half a mile to-day, and does not complain." He says it is as good as the other leg, and again on

Aug. 14th.—He says, "I saw the boy on yesterday; he is well."

Sometime in September, I saw the patient again, and examined the limb carefully and closely. I found the leg as straight as its fellow. The union is now perfect, and the boy walks and runs without the assistance of crutch or stick, and says it is quite well.

He still wears, however, a well constructed wooden boot, divided into two parts, and made to fit so accurately, that when applied they entirely enveloped the leg, forming together a perfect case. We think it best to continue the use of this boot for some time longer as a guard against accidents.

As this operation has been very rarely performed upon the tibia, with success, I have thought proper to report the case, as one encouraging item to those who may be placed under the necessity of deciding for or against an operation under similar circumstances. After consulting all the authorities within my reach, I confess that I found little to encourage me in the undertaking; and had I not been well convinced that matters could not be easily made

worse, and entertained at the same time a reasonable hope under all the circumstances, and especially in consideration of the boy's youth and beautiful appearance, that the operation might be attended with success, nothing could have induced me to have made the attempt.

In truth, the boy's beauty and sprightly intelligence had some influence, for I felt that something could and must be done to rescue so fine a boy from so tremendous a mutilation as the loss of a leg.

December 22d, 1851.

ART. V.—*An Essay on the Sore-Mouth peculiar to Nursing Females; read before the New Albany Medical Society.* By DR. P. S. SHIELDS, of New Albany, Ia.

In presenting a few thoughts on a disease peculiar to the nursing female, commonly called the "Nursing Sore Mouth," I do not propose or expect, to furnish a complete history of its symptoms, pathology, or treatment; but to direct the attention of the medical profession to a disease, which is endemic to our country—confined to certain regions or localities; is of somewhat frequent occurrence; and has not received from medical authors that degree of attention, which its frequency and importance demands.—The writer has searched in vain the various systems of practice, both European and American, and also many of the periodicals of the day, but can find nothing on this subject, except two papers, published in the American Journal of the Medical Sciences. The first is a communication from Dr. Backus, of Rochester, N. Y., to Dr. Bond, of Philadelphia, published in the January number for 1841; the other from the pen of Dr. E. Hale, of Boston, published in the medical communications of the Massachusetts Medical Society, and copied into the American Journal for April, 1842. It is surprising that the disease

has not been noticed by our western journals, as I am persuaded it is one of very frequent occurrence in the valley of the Mississippi. My attention was first called to it as early as the year 1825 or '6, by our honored President, A. Clapp, M. D., when a pupil of his, and I have seen cases of it almost every year since commencing the practice of my profession. Dr. Backus has seen more or less of it in Rochester. for the last 25 years; and so has Dr. Hale, in Boston. And the editor of the Journal of Medical Sciences remarks, that Dr. Shanks, of Memphis, Tenn., says it is of frequent occurrence in that place.—But the editor further remarks, that he has never witnessed a case in Philadelphia; neither has the late Dr. Dewees, or any of the physicians of that city with whom he has conversed.

This disease is connected with, if not always produced by *Lactation;* I cannot say protracted, for it often makes its appearance as early as the first or second week, and generally between the fourth and eighth month; whilst many females continue to nurse for twenty or twenty-four months, without detriment to their health. Drs. Backus and Hale both say, that it attacks pregnant females towards the latter months of ultro-gestation. But I am persuaded they have confounded with it another form of sore-mouth, which is occasionally seen in the pregnant female. Dr. Hale says that it commences with a small red pimple upon the edge of the tongue, or inside of the lips, and soon forms a deep ulcer, with hard elevated edges, surrounded by an inflamed circle. Dr. Backus also speaks of it as occasionally commencing in this way. This form of sore-mouth is not confined to the pregnant female, but occasionally attacks the adult male, and children of both sexes; and is generally connected with derangement of the stomach and bowels. The writer has seen these ulcers, in one case, coexistent with the nursing sore-mouth, but regards it as merely incidental, as the

nursing sore-mouth was almost cured, and the general health much improved, when they made their appearance.

The attack of sore-mouth is often very sudden—coming on in a few hours; but in most cases it is preceded by general lassitude, particularly a sinking weakness across the chest and epigastrium after nursing. This is followed by acid eructations, and burning sensation at the stomach. The first sensation in the mouth, is that of scalding, which is often intensely painful, and is accompanied by a profuse flow of a thin watery saliva, almost hot enough to excoriate the parts on which it may chance to flow. At the same time there is almost a complete destruction of the sense of taste. The profuse flow of saliva causes frequent spitting, which, connected with the great pain produced by the motion of the tongue, makes it often difficult for the patient to speak, and renders the articulation indistinct. Sometimes the appetite is good; at others there is little or none. The pain and irritation are sometimes so great that the reception of even the blandest articles of food causes great suffering to the patient.

This soreness of the mouth is confined principally to the under surface and edges of the tongue, extending back to its base, and sometimes to the palate; but seldom if ever to the point or dorsum of the tongue. The tongue is generally broader and thicker than natural, somewhat smoother, and of a light pinkish red appearance. Occasionally the papillæ are elevated, but the tongue is seldom if ever coated. There is often a slight abrasion, and in a few cases a portion of the tongue had the appearance as if the cuticle had been removed by a fly blister; but in no case has been seen a deep ulcer or any destruction of substance. These symptoms often continue for a week or ten days, causing great suffering; and then may partially or entirely disappear for a short time, and as suddenly return again in an aggravated form. Or they may gradually increase from week to week; accompanied by ema-

ciation, and a long train of nervous symptoms, rendering the patient exceedingly wretched, until she is relieved by the weaning of the child, which generally quickly restores her to her wonted health and strength; or, if lactation be persevered in, and she is thus predisposed, phthisis or some other serious organic affection, may be thus developed. The bowels are generally rather slow, and the alvine evacuations of a dark green appearance. Dr. Hale says the soreness generally commences in the mouth, and then the inflammation extends to the mucous membrane of the esophagus, stomach, and bowels, causing diarrhœa; but according to my observation, the gastric symptoms precede the soreness of the mouth, and diarrhœa seldom appears; on the contrary the bowels being usually confined. The sore-mouth and diarrhœa sometimes alternate; the one curing or taking the place of the other.

There is always either a copious secretion of milk, or a preternatural richness in its quality; and the child is large and healthy. The mother usually says "that every thing she eats goes to milk." The pulse, at first, is but little altered in fulness or frequency. The skin is about its natural temperature. Dr. Hale says it is generally soft, and often attended by a profuse perspiration. This I have seldom witnessed.

There is much difference of opinion as to its pathology. That the local affection of the mouth is not the true seat of the disease may be inferred, becauss local remedies have little or no effect towards its removal. Besides, the gastric and constitutional symptoms precede those of the mouth. In one case under my care, the lady could always tell when an attack was coming on, from the burning sensation at the stomach, and the acid eructations, which came on an hour or two before the soreness of the mouth. If it were from inflammation of the stomach, we should have the gastric distress immediately on the reception of

food, but those symptoms do not appear for an hour or two after eating. The disease also frequently comes on suddenly, and often disappears with equal suddenness, often without the use of any remedies.

It no doubt has its origin in debility, producing functional derangement of the stomach, and by either extension or sympathy, the mouth.

That lactation must produce this exhaustion of the vital powers, is evident from the large demand on the general system necessary to the unusually large secretion of milk. That it frequently attacks ladies possessing apparently robust constitutions, is no valid argument against the asthenic character of this disease, as we often see such persons have great intolerance of the loss of blood, or sink rapidly under any profuse discharge; whilst others possessing frail constitutions, or in feeble health, bear with impunity the same loss. There is also a great difference in the tenacity of life not to be ascertained by external conformation. When we contemplate the long continued and preternaturally large drain from the vital fluid of the nursing female, we need not be surprised that disease should follow. But why the mouth should be the part affected, in the nursing female, rather than some other part, we are not called upon to explain; neither is it necessary to the adoption of a correct treatment.

I am unable to give the post-mortem appearances, having never witnessed a fatal case.

Treatment.—If the foregoing views of its pathology be correct, it is manifest that the only certain means of cure, is to cease nursing before the development of any organic disease. According to my observation, a speedy restoration to health has always followed weaning. Drs. Backus and Hale make the same statement. But weaning the child may not always be necessary. By a proper course of treatment, it may sometimes be cured, or so much palliated, that she may continue to perform this important

function without much suffering or danger to her life or future health. Neither can we always determine the propriety of weaning by the degree of soreness of the mouth; for many suffer severely from the mouth, while the gastric and constitutional symptoms are not at all urgent.

We should always try other means of cure, unless from the urgency of the symptoms weaning is rendered absolutely necessary to preserve the life of the patient. In my practice local applications have been of little or no service towards removing the disease. A solution of 15 grains of the nitrate of silver to ℥i of water, applied to the inflamed parts, by means of a camel's hair pencil, gives the most relief of any thing I have tried. A wash made of the acet. plumb. in water has occasionally proved beneficial. I once knew a lady greatly relieved by a wash made of a decoction of the blackberry-briar root with alum and white sugar. But our principal remedies must be directed to restoring the stomach and bowels to their healthy action, and giving tone to the general system.

I have generally commenced the treatment, by giving a gentle cathartic, such as blue mass at night, followed the next morning by rhubarb and calcined magnesia, to evacuate the intestinal canal, yet carefully avoiding active purging. The rhubarb and magnesia are then continued in smaller doses morning and evening, so as to keep the bowels in a soluble state, correct acidity of the stomach and give tone to the general system. We may give for the same purpose, a pill composed of equal parts of rhubarb, aloes and soap. Dr. Backus gives the following recipe:

℞ carb. ferri 55 grains, pulv. rhei and pulv. aloes, each 25 grains, pulv. ipecac and sapo., each 12 grains;—to be divided into 50 pills, two of which to be given morning, noon, and night; so as to keep the bowels quite loose. This, with the penciling of the tongue with the solution of nit. argent., constitutes his course of treatment.

As an antacid and tonic, the following has proved beneficial:

Carb. potass. ℥ii, tinct. cinchon. ℥i, aq. destillat. ℥vi; mix and give ℥is. every four hours.

This I have found to set well on the stomach, and allay irritability of this organ when present. For the gastrodynia and pyrosis, the following pill morning, noon, and night, has been of much benefit:

Nit. bismuth. 2 grains, sulph. quin. 1 grain, sulph. morph. 1-12 grain.

In one case when these symptoms were severe, this prescription acted like a charm, completely removing them in a short time. When there is much derangement in the secretions of the liver as well as the stomach and bowels, and a dry skin, opium and calomel have proved valuable remedies. In one case, a pill at night gave great relief. In another, accompanied by diarrhea, the opium and hydrarg. cum creta proved beneficial. The sulph. quin. alone is recommended by Dr. Hale. He places his chief dependence upon tonics; among which he recommends the infusion of bark with lime water and the bottled porter, which I have also found beneficial. Various other tonics might be enumerated; but the above are those which have been used by the writer.

A resort to the pure country air contributes greatly to the recovery. The disease appears to be most frequently met with in our towns and cities situated on low grounds and large rivers, and seldom, if ever, visiting the high lands of the country.

As to the diet, the mild farinacious articles agree with the patient much better than animal food. Indeed, the smallest quantity of animal food has been known to bring on a severe attack of the burning sensation of the mouth. But we have to be governed by observation and experience in each case.

Those persons who have once had an attack appear more liable to its return.

I have attended a lady who has given birth to five children, and suffered from this disease while nursing every one. The first attack came on about the sixth month of lactation, while each subsequent one made its appearance earlier. The last came on about the third week of lactation. The acidity accompanied by the burning sensation at the stomach, and partial loss of taste appeared as early as the end of the first week.

New Albany, Ia., December, 1851.

REVIEWS.

ART. IV.—*Outlines of Chemistry for the Use of Students.* By WILLIAM GREGORY, M. D., Professor of Chemistry in the University of Edinburgh. First American, from the Second London Edition. Revised, corrected, and enlarged by J. Milton Sanders, M. D., L. L. D., Professor of Chemistry, Pharmacy, and Toxicology, in the E. Medical Institute of Cincinnati; and Professor of Natural Philosophy and Chemistry in the Literary Department of the Memphis Institute, etc. Cincinnati: H. W. Derby & Co., Publishers: 1851. 12 mo. pp. 614.

We have copied the title page to this book in full, because it is an epitome of the work, and a token of the high claims of its American editor.

Dr. Gregory is the best English exponent of the continental, and especially of the Giessen school of chemists He is at once the organ and the echo, of the illustrious Liebig, by whose word he swears. We read his outlines of Liebig's organic chemistry in 1845, with great pleasure and profit. It was the first English dress of the compound radical theory carried out in all the detail of this most prolific and changing science, a lucid but inaccurately printed digest of the great treatise on organic chemistry by Liebig, the French issue of which is better known to chemists in America than the original German. Since then Dr. Gregory has added to his outlines of or-

ganic chemistry, the inorganic portion of the science, and in 1847, the two appeared united in the present form.

The distinguished successor of the renowned and lamented Hope needs no praise from our hands. Nor do we propose to sound his praises, or criticise his labors. It is enough that he is the chosen organ of the school of Liebig, and the author of an excellent elementary treatise, with which all teachers of chemistry are entirely familiar. This treatise is worthy of remark in one important particular, in which it differs from most others which have appeared before in England or America. We allude to the omission in its pages of all allusion to what are familiarly called the "imponderables"—the *physique* of chemistry. Where a chemist can teach a class of students who are all graduates of a college, where the general principles of physics are given, in the same way in which Geometry, Algebra, and the Natural Sciences are taught, as a part of elementary instruction, it is a great relief to him to have no necessity of teaching the doctrines of heat, or the principles of electricity, in its various departments. But it is not our experience in this country, and especially in our medical schools, that the classes who assemble to hear chemical lectures have this previous preparation. Too commonly their first intellectual efforts, in scientific acquirements, are made under the oral guidance of their teachers, whose arduous duty it is to break up for the first time, the fallow ground of uncultivated minds.—With such pupils, some time is unavoidably bestowed on those topics which are not the less indispensable, because they are more properly preliminary, and without which subsequent progress must be always halting and intricate For these reasons, and others which we could give were it required, we doubt whether Dr. Gregory's book with all its excellent points will meet the wants of *students*, and especially *medical students* in this country. To the teacher

it must always be a useful laboratory book, and especially because of the fullness of the organic portion.

Dr. Gregory in his preface tells us that he gives three and a half out of five and a half months of his course to organic chemistry, and regards this as a full compensation to the student, for the absence of the chapters on light, heat, electricity, &c., and the comparative meagreness of those on the inorganic and metallic elements.—This may be, and probably is, exactly what is required in the high-toned University of Edinburgh, where a great majority of the students are advanced scholars, and literary graduates. But it is unsuited to the purposes of American teachers; most of whom must content themselves with such instruction as they can crowd into courses of lectures, few of which reach the number allotted as the years of human life, and still fewer exceed that limit.

But we have not taken up our pen to write an essay on the present method of chemical instruction in this country, the faults of which we appreciate, however unable we may be to correct them. All that we have said or may say regarding the excellencies of the work in question is applicable solely to the original work, and not to the edition which has been "revised, corrected, and enlarged, by J. Milton Sanders, M. D., L. L. D."

That Dr. Gregory should have sought an American editor for his "Outlines" in the "E. Medical Institute of Cincinnati," may well excite our surprise, but we are assured by the learned Doctor of Medicine and of Laws, that he willingly undertakes "at the flattering request of Prof. Gregory to edit this American edition of his excellent work, adding such notes as the late progress of the science requires." We might quote farther from the American preface how much this edition is superior in accuracy to the London one, and how the notes which have been added render this more valuable than the English edition. We are warranted then to believe, that the reader will find

this edition fully posted in all that is new or important in the science, and we anticipate with pleasure, the profit we are to derive from those "*notes*," which have given to the American edition a value not found in the English.—What is our disappointment then at finding all the discoveries of the past four or five years comprised in the limits of fifteen foot notes, for the most part singularly insignificant, and amounting in all to less than a page and a half of fine print! We then turn with avidity to the table of equivalents to note there the progress of our favorite science, as posted up in this significant balance-sheet of the results of chemical research. We had heard that several important changes had been made in the atomic weights of some well known substances. We had heard, for example, that bismuth had been determined anew by Schneider, and set down at 208;—that tungsten had the number 92; glucinum 4.7; gold 197; uranium 60; and so on. But we presume that the journals and annual reports of progress are wrong on these points, for we find that Dr. Sanders, L. L. D., permits the old numbers to stand unchanged. We had also gladly accepted the rumor that the views of Dr. Prout were rapidly finding confirmation in a greatly increased number of substances, which had been found to possess an atomic weight, the multiple of hydrogen, and we were consoling ourselves, that we might count arsenic, antimony, bromine, cadmium, calcium, carbon, cerium, gold, iodine, iridium, mercury, molybdenum, oxygen, phosphorus, sodium, sulphur, thorium, tin, titanium, tungsten, uranium, &c., as whole numbers, the simple multiples of hydrogen, and free from vexatious fractions. But since the fully "corrected, revised, and enlarged" edition of Dr. Gregory's Outlines emanates from the "E. Medical Institute," with the old numbers unchanged, we are convinced that Baron Liebig's annual report, and even the American scientific journals are quite wrong and hasty in making such asser-

tions. What a delightful thing it is to have some great name to lean upon again, now that poor Berzelius is no more! Since the death of the great Swede, our faith, we confess, has been somewhat shaken in these old numbers, so laboriously determined by him, and which we learned in our youth; but now, this new Berzelius of the West reassures our doubting minds, and strengthens our conservatism. We do not, however, quite comprehend the meaning of the note on page 38, about doubling the equivalents of antimony, arsenic, sulphur, and phosphorus, since the text was written, because in the table of equivalents in the text, we find sulphur and phosphorus double already, though why we do not understand, as we say, in view of the note; and we are under the impression that Dr. Gregory is alone in doubling the number of sulphur, which all now agree upon as correctly stated to be 16. On turning to the article sulphur, we find that substance treated there under the old atomic weight, thus showing a discrepancy in the work itself, which if it did not originate with the American editor, ought to have been corrected by him.

We had also heard much of the remarkable researches of Hofmann and Wurtz, the former on the molecular structure of organic bases, and the latter on alkaloids homologous with ammonia; as constituting the great discoveries of this decade in organic chemistry. But our American editor passes them in silence, and regales us, instead, with a brief notice appended to "spirit varnishes" of recent investigations at the Memphis Institute, upon the active principles of several medicinal plants; '*resinoids*,' which have been found highly valuable remedies, and at present extensively used; and the medicinal properties of these '*resinoids*' are believed to lie in more active principles, analogous to the alkaloids in nux vomica, opium, &c. (p. 474.)

But to speak seriously and in terms not to be misunderstood, we declare that, with a few unimportant excep-

tions in the *fifteen notes* alluded to before, the whole field of organic and inorganic chemistry remains ungleaned of the rich results of the past four years of remunerative and fruitful labor, so far as the editorial contributions of Prof. Sanders are concerned. Had the editor modestly stated that he had simply seen the sheets through the press, we should have been saved the trouble of this notice, however we might have regretted the numerous typographical errors with which it is disfigured.

ART. V.—*Operative Surgery, based on Normal and Pathological Anatomy.* By J. F. MALGAIGNE, Professor Agregé de la Faculté de Medicine de Paris, Chirurgien de l' Hopital de Lourcine, Chevalier de la Legion d' Honneur, et du Mente Militaire de Pologne, etc., etc. Translated from the French, by FREDERICK BRITTAN, A. B., M. D., M. R. C. S. L. Illustrated by wood engravings, from designs, by Dr. Westmacott. Philadelphia: Blanchard & Lea: 1851. pp. 565: 8 vo.

The original term for the surgical art meant literally "operative surgery," but in our day the term has come to have a much more comprehensive signification, and implies not only the *chirurgery* of the ancients, but surgical pathology. By our French brethren the phrase "medicine operatoire" proposed by Sabatier, is the one employed to designate this branch of the profession, but they embrace in it only a part of operative surgery, arbitrarily excluding many things which we range under it, e. g. the application of bandages, and the reduction of luxations and fractures. In this they act less wisely than the surgeons of England and America, but at the same time let us admit that both in historical and operative surgery, they have hardly any equals in the world. With them much more than with any other nation, the history of surgery is a study; and Velpeau, following in the path which Sabatier first opened, has excelled all his contemporaries in this line of labor. In a rapid sketch of the

progress of surgery, Malgaigne mentions "a deficiency of anatomical data" as one of the circumstances by which its march has been retarded, and relates the strange fact, that when the Faculty of Medicine of Paris wished, in the beginning of the last century, to institute a course for the repetition of operations on the dead subject, the whole corporation of surgeons rose with great clamor against this innovation, which it denounced as rash and fatal. The candid Frenchman admits, that *medicine operatoire* in England, moulded on pathological anatomy and experiment, after the example and lessons of John Hunter, "for a moment surpassed" French operative surgery, and even now is almost its equal, so vigorous was the impulse it received from the hand of that great master. But in neither country does he believe the art has reached perfection, or accomplished all that it ought to do. Especially among his own countrymen, he is aware that it has not always taken the best direction.

"Perhaps," he says, "in the real progress made in our time by *Medicine Operatoire*, its end has been overlooked: whilst practicing the operations on the dead body, perhaps the living patient has been too much forgotten; whilst perfecting the operations, all that should precede and follow them—the indications and results—have been left in the shade. In the first editions of this book, I had stated, "A treatise on operative surgery, to satisfy all the requirements of the age, should, for each operation,—first, discuss the indications, exactly study the surgical anatomy, review all the proceedings, and, after mature examination and judicious choice of the best, describe the manipulation with all the necessary detail;—then point out the different methods of dressing; set forth a statistical account of successes and failures; and, lastly, seek in post-mortem appearances the causes of death in fatal cases, in order to point out their remedy." But at the present day even these conditions no longer suffice. Experience teaches us daily that we must not regard as completely cured all those who apparently recover; and that it is ex-

tremely necessary to keep an exact account of the relapses, both in relation to the nature of the disease, and according to the proceeding adopted. This is not all; for, after the most positive cure, it is still interesting to study the consequences of each operation, as well on the organs and functions, as on the general vitality of the patient. Any observation that does not extend so far should be considered incomplete. This is almost a new field offering itself to the surgeons of the present day."

In his work he has not attempted to give even an outline of the history of the several operations embraced in it, but has described each in a succinct but clear and intelligible manner, giving the results without discussion.— The parts which he has treated with especial care, are the surgical anatomy and the operative manipulations, precisely the points upon which the young surgeon is desirous of information, and it is doubtless the excellence of his manual in this respect that has given it such currency in all the countries of Europe. It is just such a guide as the operator wants, embracing every case likely to demand his interference. In the time since it was published, (1842,) operative surgery has received a great boon to which it makes no reference; no mention is made among the means of diminishing pain during operations, of the discovery of our modern anesthetic agents; but this is a deficiency which every young surgeon in our country can readily supply.

The analysis of a work such as this, is a matter out of the question. In its composition it was the study of the author to condense his matter as much as possible, and any farther compression would render its details unintelligible. It is a work not only to be diligently perused by the student, but to be consulted continually by the practical surgeon, whose mind requires to be refreshed on any of the procedures of his art. The teachings of Malgaigne are not always such as the experienced surgeon will adopt,

as, indeed, what writer's are? As to the best mode of performing most of the operations, there is a diversity of opinions among practitioners, and the operator is obliged to decide in each case for himself; but, in the main, our impression is, that no safer guide has yet been offered to the acceptance of the profession than the volume of which we thus take our leave.

ART. VIII.—*Elements of Physiology, including Physiological Anatomy.* By WILLIAM B. CARPENTER, M.D., F. R. S., F. G. S., Examiner in Physiology and Comparative Anatomy in the University of London; &c., &c. Second American, from a new and revised London edition. With 190 Illustrations. Philadelphia: Blanchard & Lea. 1851. pp. 566: 8 vo.

This is the third treatise on Physiology from the pen of Dr. Carpenter and the least of the three. His "Principles of Physiology, General and Comparative," an extensive and recondite work, has but lately been introduced to American readers. They are familiar with his admirable "Principles of Human Physiology." The volume before us, though combining in some degree the scope of the other two, cannot be regarded as a mere abridgement of them, having been written for the most part according to the author's own account, with very little reference to them, and with every desire to make it complete in itself. In this effort he has been entirely successful; he has produced a manual as complete as can be found—we will not say in all the literature of physiology—but on any branch of science pertaining to medicine. We do not affirm that in all respects it is equal to its predecessors. It is not so large; it is not so copious in illustration, nor so minute in its details; but on this very account it is better adapted to the wants of the student—a more complete manual.—At the same time that all needless detail has been avoided,

it has evidently been the study of its judicious and learned author to avoid the more serious error of sending forth an imperfect and superficial sketch of the science.

"His object has rather been," as he well expresses it himself, "to convey to the student as clear an idea as possible of those principles of physiology, which are based on the broadest and most satisfactory foundation, and to point out the mode in which these principles are applied to the explanation of the phenomena presented by the living actions of the human body. In this manner has the anthor desired to prepare him for that more detailed study of the latter, which becomes necessary when physiology is pursued (as it ought to be) in connexion with the changes produced in the living body by morbific and remedial agents, and is thus taken as a guide in the study of the causes, prevention and treatment of disease—which should be the primary object of attention with every one who undertakes the practice of his profession."

Dr. Carpenter, as our readers generally know, belongs to the school of physiologists, who admit of physical and chemical agencies in the animal economy. He is as far removed as possible from the strait sect of vitalists. He is, perhaps, even ultra in some of his chemical doctrines in regard to certain vital functions. It may be that he is inclined to assimilate the living body too much to the chemist's laboratory. Such, however, is not our belief. On the contrary, we are persuaded that the progress of physiology, in past times, has been seriously retarded by the assumption, that its phenomena were all to be attributed to the operation of a mysterious vital principle, the laws of which we could hardly ever hope to comprehend, or if mastered at all, must be sought for by methods of investigation entirely distinct from those which are employed in other sciences. Vital action is something peculiar, it is true, but its laws are to be attained by the same processes which have proved so successful in advancing

physics and chemistry; its phenomena must be collected and compared, and then submitted to the same method of reasoning as that which we use in determining the forces and properties on which other phenomena depend. Such are the principles embraced in the work before us, and upon which modern physiology has been cultivated with so much success.

We are to collect the phenomena, not so much by experiments on living animals, as was the fashion some years ago, as by taking advantage of those "experiments ready prepared by Nature," which we find in the variety of forms of living organized beings peopling the globe. If we would learn the significance of any part or organ, we are not to go about mangling some poor dog or ass in order to determine it, but go to the animals most simple in their structure, and after ascertaining what it is in them, trace it through all the stages of its development until it appears complete in the highest races.

One of the most remarkable generalizations of physiological sciences, that "*every organized fabric*, however complex"—not only "the vast tree, but the feeling, thinking, intelligent man, *has its origin in a cell*—a closed vesicle or minute bag, formed by a membrane in which no definite structure can be discerned, and having a cavity which may contain matters of variable consistence." Of such a cell the whole organism of some simple plants entirely consists: they are made up of it; it is all the plant. Such is that curious growth found sometimes on the snow in some countries, the *Protococcus nivalis* or "red snow," giving to the surface the color of blood. The germ from which the more complex vegetables and even the highest animals spring, "differs in no obvious particular from the permanent condition of one of these lowly beings." The powers of the latter are restricted to a multiplication of new cells, each like the parent; but the former pass through many transformations and a complex fabric with diversified elements

is the result. The most highly organized being, however, consists of cells which have undergone no such transformation, each having its particular object in the general economy, and the history of each being essentially the same as if it were maintaining a separate existence.

Let us, with our author, pursue the history of the solitary cell of one of the simplest cryptogamic plants from its first development to its final decay. In the first place, it takes its origin from a *germ*, it may be, a *molecule* too microscopic to be seen without a powerful glass. It increases in size, and a distinction at last appears between its parts which at first seemed homogeneous—between its transparent exterior and its colored interior; and thus we have the first indication of the *cell-wall* and the *cavity*.—The growth continues and this distinction becomes more obvious; the cell-walls are seen to be transparent and homogeneous in texture, whilst the contents of the cavity are distinguished by their color, which is generally green or crimson. They, too, at first appear to be homogeneous, but soon become granular, and these granules grow ultimately into the germs of new cells which are set free by the bursting of the parent cell. This is the end of one generation, but the commencement of the life of a new brood. Each of these germs may become developed into a cell, and in its turn multiply its kind by a similar process.

And this seems to be, briefly, the history of all living beings. In all, the cell originates in a germ or reproductive body, which was prepared by a parent cell. We have no reason to believe that chemical forces can originate the germ of even the humblest plant, but every one to conclude that all vegetables as all animals are the offspring of parents, to which they bear a resemblance in every essential particular. "But how does this *germ*, this apparently homogeneous molecule, become a cell?" We answer that it is endowed with the property of drawing materials to itself from the elements around, and of incor-

porating these with its own substance. The vegetable cell requires for food only carbonic acid, water and ammonia, and out of these developes new cells, and all the parts of the vegetable fabric. Sugar and starch, gum and albumen result from their combination, and these in one place produce the bark of the plant and in another the wood, in one the coloring matter of the leaves, and in another the fruit—tissues the most diverse in structure and properties thus taking their origin in the same organizable material, the sap or cambium. In like manner, we see in animals from the same circulating fluid all the various elements of the complex organism developed, bone in continuity with bone, muscle with muscle, and nerve with nerve.

In all this there is something to remind us of chemical affinity, and yet much that chemistry cannot imitate or explain. Upon chemical principles we should expect bone to attract to it the elements of bone in the blood, and muscle to attract the fibrin, but there is no refined chemical process by which fibrin can be formed. We have therefore no resort but to say that this, as well as the muscle which it goes to develop, is the product of vitality. We must conclude that there is some peculiar force inherent in living beings by which their various functions are performed. Nay, it is certain that—

"Every kind of cell has its own specific endowments; and generates in its interior a compound peculiar to itself. The nature of this compound is much less dependent upon the nutrient materials which are supplied to the cell, than upon the original inherent powers of the cell itself, derived from its germ. Thus we find that the "red snow" and "gory dew" invariably form a peculiar red secretion; and that they will only grow where they can obtain, from the air and moisture around, the elements of that secretion. Again, the "yeast plant" invariably forms a secretion analogous to animal proteine; and it will only grow in a fluid which supplies it with the materials of that

substance. Hence the red snow would not grow in a fermentable saccharine fluid; nor would the yeast plant vegitate on damp cold surfaces. Yet there is little difference, if any, between their cell-walls, in regard to chemical composition. So, also, we shall find hereafter, that one set of cells in the animal body will draw into themselves, during the process of growth, the elements of bile; another, the elements of milk; another, fatty matter; and so on: the peculiar endowments of each being derived from their several germs, which seem to have an attraction for these substances respectively, and which thus draw them together; whilst the cell-wall appears to have a uniform composition in all instances."

Not only is each cell possessed of its own specific endowments but has some distinct office which it is specially adapted to perform. Thus in the act of secretion there are true secreting cells, and parent-cells to develope them as fast as they are destroyed. The parent-cells themselves possess no secreting power, nor do the true secreting cells possess any reproductive power; but the vital forces of the former are entirely expended in the production of the latter, which, having reached maturity and performed their function, die and are cast off. In like manner the cells which constitute the fibrillæ of the muscular fibre have simply the office of contraction to perform, with no power of self-multiplication; and consequently their vital force having been expended in the act of muscular contraction, they perish and are removed.—Their renewal, we have reason to believe, is accomplished by the myolemma, which takes no part in muscular contraction, but is possessed of the reproductive capacity.

"All the truly *vital* phenomena," Dr. Carpenter concludes, "however diversified, are but results of the operation of one and the same force, whose particular manifestations are determined by the nature of the material substratum through which it acts: the same fundamental

agency producing simple *growth* in one case, *transformation* in another, *multiplication* in a third, *mechanical movement* in a fourth, whilst in a fifth it developes *nervous power*, which may itself operate in a variety of different modes."

The question then comes up, what is the source of this vital force? Inherently an attribute of the primordial cell, it is nevertheless dependent for its activity upon those external agencies known as vital stimuli. It can only manifest itself when called forth by light and heat.—The plant cannot decompose carbonic acid except with the aid of light, and the energy with which it effects its decomposition is in strict ratio, other things being equal, with the illuminating power of the rays which it receives. And heat is equally indispensable to the growth not only of vegetables but of animals, the activity of the latter being in proportion to the temperature of their bodies.—There is a remarkable correlation between heat, light and electricity which strikingly illustrates the functions of living beings. Thus the motion of a body retarded or resisted by friction, gives rise to heat; and on the other hand, heat applied to any form of matter produces expansion, which is motion. Electricity is developed by the same friction, and electricity retarded gives rise to calorie. Electricity is also excited by the action of heat in a certain combination of metals, and the electrical current excites, not only heat, but light, magnetism, or motion, according to the nature of the substances throughwhich it is transmitted. These forces generate chemical affinity and in turn are generated by it, in all cases a material *substratum* being essential.

The same correlation seems to exist between these physical forces and the vital endowments.

"Thus we may say that light and heat acting upon the organic germ, become transformed into the vital force, in

the same manner as heat acting upon a certain combination of metals becomes electricity, or as electricity acting upon iron developes itself as magnetism; and we shall find that this view is in complete harmony with all the phenomena of vital action. Moreover, the vital force thus engendered frequently manifests itself in producing physical or chemical phenomena; thus completing that mutual relationship or correlation, which has been shown to exist among the physical and chemical forces themselves."

We have examples of this principle in the production of heat by animals and certain plants, in the extrication of light by some tribes of the former, and more remarkably in the development of light, heat, magnetism, and electricity by certain species of fish. In the latter instance there is a striking transmutation of the vital into the physical forces, as in other circumstances we have a similar conversion of the physical into the nervous force. But, although electricity is capable of exciting the nerves to a performance of their function, and the nerves in the torpedo or gymnotus electricus produce electricity, we are not therefore to conclude that the forces are identical. There is a striking analogy between them; they stand to each other in the relation that caloric stands to magnetism, or electricity to chemical affinity. The vital forces give rise to physical phenomena, and the physical forces are transmuted, in living beings, into vital activity. Nor is this all; for these physical forces derived from the inorganic world return to it again as the result of vital activity, along with the materials out of which the living structures were produced.

"The plant forms those organic compounds, at the expense of which animal life (as well as its own), is sustained, by the decomposition of carbonic acid, ammonia, and water; and the light, by whose agency alone this process can be effected, may be considered as metamorphosed into the peculiar *affinity*, by which the elements of these com-

pounds are held together. The heat which plants receive, acting through their organized structures as vital force, serves to augment these structures to an almost unlimited extent, and thus to supply new instruments for the agency of light, and for the production of organic compounds. The whole *nisus* of vegetable life may be considered as manifested in this production; and, in effecting it, each organism is not only drawing material, but force, from the universe around it. Supposing that no animals existed to consume these organic compounds, they would be all at last restored to the inorganic condition by spontaneous decay, which would reproduce the carbonic acid, water, and ammonia, from which they were generated. In this decay, however slow, heat and light are given out, in the same amount as when more evidently produced in the ordinary combustive process; and this sometimes occurs even during the life of the plant, whose vital movements, also, may be considered as restoring to the inorganic universe a certain measure of the force they have derived from it under other forms. Thus in making use of the stores of coal which have been prepared for his wants by the luxuriant flora of past ages, man is not only restoring to the atmosphere the carbonic acid, the water, and the ammonia, of the carboniferous period, but is actually reproducing and applying to his own purposes, the light and heat which were operating to produce the growth of vegetation at that remote period in the earth's history."

The views of the author on this interesting subject are still more fully unfolded in the following passage, which cannot fail to arrest the attention of the reader:

"But the organic compounds which the agency of light and heat upon the vegetable structures has produced, are designed for a much higher purpose, than that of being merely given back to the inorganic universe by decay or combustion; and the forces which hold together their elements have a much more exalted destiny. In serving as the food of animals, a part of them become the materials of their organized tissues, and the instruments through which the nervous and muscular forces are developed; whilst another part are applied to sustain the combustive process, by which the heat of the higher classes is main-

tained quite independently of the external supply of that force. The greater part of the animal kingdom, however, is dependent, like the vegetable, upon the inorganic universe, for the heat which serves as its organizing force; and it is only under the constant influence of this agent, that the operations of growth, development, and maintenance can take place. The animal is not dependent like the plant upon light; and this is obviously because that agent is chiefly concerned in the preliminary operation, by which the organic compounds are generated as the pabulum of the growing tissues; in fact, the embryo within the germinating seed, which, like the animal, is nourished upon matter previously prepared for it, is most rapidly developed in the absence of light, up to the time when, its store being exhausted, its further supplies must be obtained by its own instrumentality. The vital activity of animals, then, may be considered as chiefly sustained by the chemical forces subsisting in their food, which are set free when the elements are reconverted to their original state; and by the heat which they derive from external sources, or from the combustion of a part of their food. These forces may be considered as in a state of continual restoration to the inorganic universe, during the whole life of animals, in the heat, light, electricity, still more in the motion, which they develope; and, after their death, in the production of heat and light during the processes of decay. During animal life, there is a continual restoration to the mineral world, of the carbonic acid, water, and ammonia, which have been appropriated by plants; and it will hereafter appear, that the amount thus given off by the animal organism bears a close correspondence, on the one hand, with its degree of vital activity, as shown in the amount of heat and motion which it generates, and, on the other, with the amount of the organic compounds which it consumes as food. So that, on the whole, there is a strong reason to believe that the entire amount of force (as of materials), received by an animal during a given period, is given back by it during that period, provided that its condition at the end of the term is the same as it was at first; and further, that all the force (like the material), which has been expended in the building up of the organism, is given back by its decay after death."

Thus, we have seen, it is by the agency of cells that all the functions alluded to are performed. The muscles contract, digestion, nutrition, secretion are accomplished by means of cells. The cell in nutrition, as in muscular contraction, is worn out in the performance of its function and cast off, so that the process by which the fabric is built up involves decay, and food is required to reproduce the cells wasted in it.

In like manner, the reproduction of animal and vegetable species is performed by cells. This function has been esteemed the most mysterious of all that pertain to the higher animals; but, as remarked by Dr. Carpenter, we do not see that there is anything more difficult to understand in the fact, "that the parent cell organizes and vitalizes the protoplasma which it has elaborated, so that it should form the germ of a *new* individual possessing similar properties with itself; than in its incorporating the same material with *its own* structure, and causing it to take a share in its own actions." It consists essentially in the preparation of a cell-germ, which, when set free, gradually develops itself into a structure like that from which it sprang. And these reproductive cell-germs are formed, like the tissue and the contents of the parent-cell, from the nutrient materials which it has the power of bringing together and combining.

In the higher animals re-production requires the union of the sexes; but in some of the lower tribes both the male and the female germ is furnished by the same individual; and, as showing the close relation of the generative function to that of nutrition, it may be mentioned that the *sex* of the plant seems to be dependent, in some cases, upon the circumstances attending its growth, particularly the temperature. Melons and cucumbers, for example, it has been found by experiment, will produce none but male or staminiferous flowers, if their vegetation be aecelerated by heat; and all female or pistilliferous

flowers, if its progress be retarded by cold. And something of the same modification is wrought in the bee by food; not, indeed, a change of sex, but an arrest of development in the sexual organs of the female by which *neuters* are produced. In every hive of bees, it is known to the naturalist, the majority of individuals consists of these neuters, having the organs of the female sex undeveloped, and are therefore incapable of re-production; that function being restricted to the *queen*, who is the only perfect female in the community. "If by any accident the queen be destroyed, or if she be purposely removed for the sake of experiment, the bees choose two or three from among the neuter eggs that have been deposited in their appropriate cells, which they have the power of converting into queens The first operation is to change the cells in which they lie into *royal* cells, which differ from them considerably in form, and are of much larger dimensions; and when the eggs are hatched, the maggot is supplied with food of a very different nature from the farina or bee-bread, which has been stored up for the nourishment of the workers, being of a jelly-like consistence, and pungent stimulating character. And after the usual transformations the grub becomes a pefect queen, differing from the neuter bee into which it would otherwise have changed, not only in the development of the reproductive system, but in the general form of the body, the proportionate length of the wings, the shape of the tongue, jaws, and sting, the absence of the hollows on the thighs in which the pollen is carried, and the loss of the power of secreting wax."

In the former illustration, the sex was determined by the amount of heat stimulating the vital processes; in the latter, the development of the sexual apparatus depends upon the *kind of food* supplied. Both show how closely allied are the nutritive and reproductive functions.

We have seen that there is a certain ratio between the duration of life and vital activity—that, in a word, the

former is inversely proportioned to the latter. Those tissues in which life is most vigorous are the tissues in which change is most rapid; and the animals most active in their habits are those which perish most speedily if not duly supplied with food. The principle is well exhibited in plants, in which we see the active organs of nutrition, the leaves, perishable and transitory, while the stem undergoes but little change when once completely formed. The most striking manifestation, however, of this connexion between vital activity and the duration of life is afforded by what has been termed *dormant vitality*—a condition in which, without any appreciable amount of life or change, an organized structure may reman unaltered for centuries, and then go through its regular series of vital operations, as if these had never been interrupted. This state, as remarked by Dr. Carpenter, differs from life, because life is a state of activity; and it differs quite as widely from death, because death implies not merely a suspension of activity, but a total loss of vital properties. In this state, the vital properties remain; but they are prevented from manifesting themselves by the want of the necessary conditions.

"Of this dormant vitality it may be well to adduce some examples; which may assist in impressing on the mind of the student the general views here put forth. This condition is manifested in the most remarkable manner by the seeds and germs of plants; many of which are adapted to remain, for an unlimited period, in a state of perfect repose, and yet to vegetate with the greatest activity, as soon as ever they meet with the necessary conditions.—Thus the sporules of the fungi, which can only develop themselves in decaying organized matter, seem universally diffused through the atmosphere, and ready to vegetate with the most extraordinary rapidity, whenever a fitting opportunity presents itself. This at least appears to be the only feasible mode of explaining their appearance, in the forms of mould, mildew, &c., on all moist decaying

substances; and that there is no improbability in the supposition itself, is shown by the excessive multiplication of these germs, a *single individual* producing not less than *ten millions* of them, so minute as when collected to be scarcely visible to the naked eye, rather resembling thin smoke, and so light as to be wafted by every movement of the atmosphere; so that, in fact, it is difficult to imagine any place from which they can be excluded. Moreover, it is certain that an equally tenacious vitality exists in the seeds of higher plants. Those of most species inhabiting temperate climates are adapted to remain dormant during the winter; and may be easily preserved, in dry air, and at a moderate temperature, for many years. Some of those which had been kept in the Herbarium of Tournefort during upwards of a century, were found to have preserved their fertility. Cases are of no unfrequent occurrence, in which ground that has been turned up, spontaneously produces plants dissimilar to any in their neighborhood. There is no doubt that in some of these cases, the seed is conveyed by the wind, and becomes developed in spots which afford congenial soil, as already remarked in the case of the fungi. Thus it is commonly observed that clover makes its appearance on soils which have been rendered alkaline by lime, by strewed wood-ashes, or by the burning of weeds. But there are many authentic facts, which can only be explained upon the supposition, that the seeds of the newly-appearing plants have lain for a long period imbedded in the soil, at such a distance from the surface as to prevent the access of the air and moisture; and that, retaining their vitality under these circumstances, they have been excited to germination when at last exposed to the requisite conditions.—Thus Professor Lindley states as a fact, that he has raised three raspberry-plants from seeds taken from the stomach of a man, whose skeleton was found thirty feet below the surface of the earth, at the bottom of a barrow which was opened near Dorchester; as his body had been buried with some coins of the Emperor Hadrian, there could be no doubt that the seeds were 1600 or 1700 years old. Again, there are undoubted instances of the germination of grains of wheat, which were enclosed in the wrappers of Egyptian mummies, perhaps twice that number of years ago; the wheat being different in some of its characters from that now growing in the country."

Vital activity, not life itself, is dependent upon external stimuli. Life cannot manifest itself without these agencies, but it is not originated by them. The act of organization and the consequent development of peculiar properties in the tissues which are produced by it, can only be attributed to the vital force of a pre-existing organism. The phenomena called forth from organic beings by the operation of physical forces, are never seen when these forces operate upon inorganic matter. We call the principle which stirs in living beings the vital force, and we are as ignorant of its essential nature as we are of the nature of gravitation, electricity, or chemical attraction; but we assume that it is a *peculiar* principle, because its phenomena are unlike those of any other. It is not caloric, nor electricity, nor the force which causes chemical union among elementary bodies; it differs as widely from them as they do from one another. But just as heat acting under certain conditions may be transformed into electricity, and electricity under other conditions, may be converted into heat, so may either of these forces, acting under conditions which an organized fabric alone can supply, be converted into vital force, whilst, in their turn, as we have seen, they may be generated by the nervous system of animals. The torpedo can at the same time impart the electrical shock, deflect the magnetic needle, emit a spark, develop heat, and decompose chemical compounds.

Of the nature of this power, as we have said, we know nothing; we are led by our consciousness to refer it to a divine will.

"So also, if we endeavor to assign a cause for the existence of a cell-germ, we are led at first to fix upon the vital operations of the parental organism by which it was produced; and for these we can assign no other cause than the peculiar endowments of *its* original germ, brought into activity by the forces which have operated upon it. Thus we are obliged to go backwards in idea

from one generation to another; and when at last brought to a stand by the origin of the race, we are obliged to rest in the divine will as the source of those wonderful properties, by which the first germ developed the first organism of that race from materials previously unorganized, this organism producing a second germ, the second germ a second organism, and so on without limit, by the uniform repetition of the same processes. Yet we are not to suppose that the *continuation* of the race is really in any way less dependent upon the will of the Creator, than the *origin* of it. For while science leads us to discard the idea that the Deity is continually *interfering*, to change the working of the system He has made,—since it every where presents us with the idea of uniformity in the plan, and of constancy in the execution of it,—it equally discourages the notion entertained by some, that the creation of matter, endowed with certain properties, and therefore subject to certain actions, was the *final* act of the Deity, as far as the present system of things is concerned, instead of being the *mere commencement* of his operations. If it be admitted that matter owes its origin and properties to the Deity, or, in other words, that its *first existence* was but an expression of the divine will, what is its *continued existence*, but a continued operation of the same will? To suppose that it could continue to exist, and to perform its various actions, *by itself*, is at once to assume the property of *self-existence* as belonging to matter, add thus to do away with the necessity of a Creator altogether; a conclusion to which it may be safely affirmed that no ordinarily constituted man can arrive, who reasons upon the indications of mind in the phenomena of Nature, in the same way as he does in regard to the creations of human art."

We venture to believe, that no reader has followed us through this analysis of the first chapter of Dr. Carpenter's work without becoming interested in the subject, and feeling a curiosity to know more of its contents. Its sound and novel philosophy, its rich fund of facts, its clear, logical arrangement, and its polished and elegant style render it one of the most attractive volumes that

has for a long time come under our eye. We need hardly add, after all this, that we cordially recommend it to our readers.

Art. IX.—*Cox's Companion to the Sea Medicine Chest,* and Compendium of Domestic Medicine; particularly adapted for Captains of Merchant Vessels, &c., with plain rules for taking the medicines; directions for restoring suspended animation, the method of obviating the effect of poisons, &c., &c. Revised and considerably enlarged by R. Davis, Member of the Royal College of Surgeons. First American from the thirty-third London edition. New York. Samuel S. & William Wood. 1851. 12mo. pp. 276.

An American edition of Cox's Companion is an acceptable addition to the literature and resources of popular medicine. This edition has also useful additions of many new articles, and the vulgar names of medicines before given only with their technical designation.

"The circumstances of this little work having passed through thirty-two editions is a sufficient guarantee, if any were wanting, of its value, and of the estimation in which it has been held by the public far so many years."

"The book, as it now stands, is divided into three departments or divisions:—First, a Pharmaceutical or Drug Department, in which is contained a full account of all the principal medicines in use, their properties, qualities, and doses, as administered in the cure of disease.

Secondly, a Surgical Department, in which is given a concise description of all the more common dislocations and fractures incidental to persons employed in laborious occupations, together with their symptoms and treatment.

Thirdly, a Medical Department, which points out the best mode of treating successfully those bodily complaints to which children and grown persons are subject.

The whole is written in an easy style, and free from all technicalities, so that he that runs may not only read but understand.

In the commencement of the work will be found a Scale of Doses, by which means the proper dose of any medi-

cine suited to different ages will be seen at a glance, and an ALPHABETICAL LIST of the drugs spoken of; and, at the end, a LIST OF THE MEDICAL TERMS used in the work, with their explanation in English, as well as a copious INDEX, by which any given subject may be immediately found without delay."—*Preface.*

ART. X.—*The Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias,* comprising standard and approved formulæ for the preparations and compounds employed in Medical Practice. By HENRY BEASLEY, M. D. First American from the London edition. Lindsay & Blakiston. Phila. 1852. 12mo. pp. 443.

This appears to be a carefully prepared synopsis of the standard pharmacopœias, and the list of works consulted in compiling the Pocket Formulary embraces nearly every important work on Materia Medica and Therapeutics in our language, and many from the French. A wide range of periodical literature has also been collated, for the purpose of enriching the work. The arrangement is alphabetical, with sufficient reduplication of synonyms to make it easy to refer to an article under any of its common names. The matter is necessarily very concise but it is clear and precise, and reference is given to authority in all important cases. Under the head of preparations and compounds employed as counter-poisons, we find Smith's antidote for prussic acid, viz: carb. iron, precipitated in the stomach by giving first the dose of carb. potas, and subsequently that of sulphate of iron. Formula, 10 gr. F. sulph. in ℥j water, and add ℥i of tinct. muriate (sesquichloride) of iron. In another vial, dissolve ℈j of subcarbonate of potash in two of water. Give the latter as quickly as possible, followed by the former.—The solutions should be kept in readiness.

Magnesia.—Caustic magnesia is also recommended as an antidote for white arsenic (arsenious acid), with some

precautions to prevent its being injured by over-heating. It is recommended to prepare it fresh by the wet way by dissolving mag. sulph. in 25 times its weight of water; of caustic potash half the weight of the salt is to be taken and dissolved in 20 times its weight of water;—mix the solutions, collect the precipitate on a linen cloth, press it slightly, and if wanted immediately use it without further washing, half or three quarters of an ounce to a pint of water diffused. This form of magnesia is also one of the best antidotes to *acid* poisoning. In this connection we may also mention, that the hydrated protosulphuret and persulphuret of iron are the most reliable exhibitions as antidotes for metallic poisons generally, viz: for the salts of mercury, copper, and lead. A mixture of the above magnesia with moist sulphurets of iron would form an excellent antidote to be always on hand for metallic poisoning *including* white arsenic.

Ioduretted iodid of potassium, and purified animal charcoal are also recommended as antidotes for the vegetable alkaloids, viz: opium, salts of morphia, hemlock, aconite, belladonna, strychnine, colchicum, &c., but not for digitalis.

The profession will find "Beasley's Pocket Formulary" a very valuable vade mecum.

Art. XI.—*Intermarriage; or the mode in which, and the causes why, Beauty, Health, and Intellect, result from unions, and Deformity, Disease, and Insanity, from others: illustrated by delineations of the Structure and Forms, and descriptions of Functions and Capacities, which each parent, in any pair, bestows on Children—in conformity with certain natural laws, and by an account of corresponding effects in the Breeding of Animals.* With eight illustrative drawings. By Alexander Walker. Philadelphia: Lindsay & Blakiston. 1851.

We do not think that Mr. Walker has philosophical knowledge sufficient to enable him to make the best pos-

sible work on intermarriage, but he has collected a vast fund of useful facts, which abler minds than Mr. Walker's will shape to valuable ends. In the present condition of society, it can scarcely be expected that any lessons on intermarriage will be productive of much benefit. It is a subject upon which few men, and fewer women, think it worth their while to bestow much study, on the points elaborated by Mr. Walker. The great object of the great mass of the two classes concerned in marriage is first, money; second, position in society; third, convenience. The improvement of the race, the health and vigor of the physical frames of offspring, and the powers of intellection that may be imparted by parents, do not often enter into the intentions of new fledged love. But the subjects of which Mr. Walker treats are of vast and momentous concern, and demand the rigid investigation of every thinking mind. There is an immense amount of, what is called, moral and mental philosophy, taught in the colleges, for which the valuable lessons of Mr. Walker's book might be substituted, greatly to the advantage of society. Brown University has set a noble example in deserting a portion of the antiquated notions of the past on the subject of time-worn formulas of college education, and in substituting therefor utilitarian views and courses. That institution does not hold that it is essential to the making of a good engineer, geologist, metallurgist, or anything else of the kind, that a man must go through the well-worn stages that end in dubbing him A. B. or A. M. The thanks of the country are due to President Maynard for the stand he has taken in opening the portals of Brown University to usefulness and the diffusion of knowledge that is the more real because it is practical.

But, to return to Mr. Walker's book on intermarriage, we think it is filled with a great variety of useful matter that can be made useful to the physiologist. The

evils of society are deep-rooted, and look firm in the superstructure, but truth is ever fresh and ever vigorous, and error must finally yield. The wonders of change are the crowning glories of the first half of the nineteenth century. Since the beginning of the current century changes have occurred in society, in commerce, science, the mechanic arts, and in all the details of the social state, that amount to the creation of a new era. The thorough adoption and practice of Mr. Walker's principles of intermarriage would not be a greater departure from "that which is old and vanishing away," than the changes we find in a vast proportion of the concerns of the social state.

Mr. Walker's book has been before the public for some years, and has commanded a profound attention. It well deserves the study of society, and we commend it to such of our readers as have not yet perused it, as a book replete with interesting and valuable instruction. The present edition is published in beautiful style by Lindsay & Blakiston. B.

Art. XII.—*Essays on Infant Therapeutics.* To which are added, observations on Ergot; history of the origin of the use of mercury in inflammatory complaints; together with the statistics of the deaths from poisoning in New York, in the years 1841—'2—'3. By John B. Beck, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the University of New York; &c. &c. Second edition, enlarged and revised. New York. Wm. E. Dean. 1852.

The preparation of a new edition of this admirable series of essays occupied the closing hours of the life of the eminent physician and teacher, Professor J. B. Beck.—Few ever surpassed him in devotion to his profession.—He zealously labored for its advancement, and contributed largely to its success.

The essays before us are worthy of their admirable author. We are not prepared to subscribe fully to all the opinions and inferences of the work, but even in our differences of opinion, we cheerfully bear testimony to the calm, elevated and practical philosophy of the author, and there are few practitioners of medicine who will fail to derive information from a study of the subjects of this book.

The following is a list of the essays:

1. "On the effects of opium on the young subject."
2. "On the effects of emetics on the young subject."
3. "On the effects of mercury on the young subject."
4. "On the effects of blisters on the young subject—sinapisms."
5. "On the effects of blood-letting on the young subject."
6. "On ergot."
7. "Origin of the use of mercury in inflammatory complaints."
8. "On the deaths from poisoning in New York, &c."

An appendix is added, and contains some curious and useful matters. They consist of the following subjects:

1. "Death of a child from one drop of laudanum."
2. "Trial of a nurse for poisoning a child by giving two drops of laudanum."
3. "Case where a large quantity of opium was given to a child for strangulated hernia"
4. "On the sedative effects of tartar emetic."
5. "Death of a child from the use of tartar emetic."
6. "On bleeding *ad deliquium* in croup."
7. "On ergot, by Dr. Beatty, Dublin."
8. "On ergot, by Dr. Hardy, of Dublin."
9. "On ergot," from the *Charleston Medical Journal and Review.*

These subjects offered a fine scope to the well trained mind of Professor Beck, and he treated them with a full sense of their importance, and of his responsibilities to

his profession, and to humanity. On a great variety of points, our limited experience corroborates the views of the author ; on others w eare not prepared for full corroboration. But we earnestly commend this little work to the attention of readers of medical books.

The book is filled with a variety of useful instruction, on points of vital importance to the medical profession.

B.

ART. XIV.—*The Elements of Materia Medica and Therapeutics.* By JONATHAN PEREIRA, M, D., F. R. S. and L. S. Third American edition, enlarged and improved by the author. Including notices of the mechanical substances in use in the civilized world, and forming an Encyclopedia of Materia Medica. Edited by Joseph Carson, M. D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania. Vol. I. Philadelphia: Blanchard & Lea. 1852.

Dr. Pereira has performed an acceptable service in revising his great work on Materia Medica, a work that has no rival in the English language. The improvements that are continually adding to the resources of Materia Medica, and Therapeutics, render new editions, even of such master works as this, occasionally necessary. Dr. Pereira says: "Messrs. Blanchard & Lea, the respectable publishers of Philadelpnia, having informed me of their intention to bring out a new edition of my Elements of Materia Medica, for the American market, I undertook the correction of the last London edition, the first volnme of which was published in 1849."

"The recent publication of new editions of the London and Dublin Pharmacopœias rendered necessary a careful revision of the formulæ of the British Colleges, and entailed on me no trifling labor."

"I have embodied all recent discoveries of importance which relate to the subjects treated of in this work."

The editor, Professor Carson adds: that "he has performed the duty of introducing the improvements and emendations made in the recently issued edition of the United States Pharmacopœia, as well as notices of articles, and information upon topics, which more especially interest American physicians."

The author and editor are probably as well qualified as any men living to get up a standard work on Materia Medica and Therapeutics, and we commend this work as an invaluable accession to any medical library. It is complete in all its departments, and is well entitled to the study of all teachers and practitioners of medicine.

The publishers have discharged their duty towards this work with their accustomed fidelity.

These works may be found at the book store of Beckwith & Morton. B.

SELECTIONS

FROM

FOREIGN AND HOME MEDICAL JOURNALS.

Muscular Contraction—Cadaveric Rigidity—French and American Experiments, &c.—It appears that the *Savans* of Paris have been very recently engaged in physiological experiments upon muscular contractility, and cadaveric rigidity, and they seem considerably elated, if not dazzled, by the new coruscations of light which these researches are supposed to shed in the realms of physiology.—Whether this be, as it claims to be, a new burst of light, we will inquire into presently. In the meantime we propose to give a translation from a French Journal, narrating these discoveries, as reported by M. Leon Foucault, on behalf of M. Brown-Sequard, as follows:

According to the opinion generally received, post-mortem rigidity, which takes possession of the cadaver some time after the last breath, is wholly due to the mechanical effect of the coagulation of the blood in the animal tissues. The reasons given, have, at least, considerable plausibility. Among those individuals suddenly struck dead, whose blood preserves its natural plasticity, rigidity of the muscles manifests itself with great force, whilst it is scarcely seen in those who die after protracted diseases, or after copious hemorrhages,* and still less among those who die

*The opinion is erroneous. The most copious hemorrhage in the subjects of yellow fever does not prevent cadaveric rigidity.

asphyxiated by deleterious gases, the specific action of which prevents the coagulation of the blood. This contraction of the muscular system always disappears in advance of decided putrefaction, which destroys the organism, and subjects it to the reign of inanimate matter.

Hence we are readily induced to admit two kinds of death: the one, general, which supervenes first, at the moment when the heart ceases to beat, and which is in some sort only a displacement among the organic wheels of life, the intimate and harmonious action of which constitutes the unity of superior beings; the other variety of death supervenes subsequently in each individual wheel of the organism, as the consequence of the primary variety. Thus the general life may be abolished with the existence of the feeling or sentient unity, while, nevertheless, each organ preserves, during a time, a life of its own, after life proper, the persistence of which sustains itself above, and for some moments contends against the reign of inorganic matter. To this last phase of life cadaveric rigidity belongs, which, so far from being considered as the result of a purely mechanical action, bearing testimony to confirmed death, is, on the contrary, the last manifestation of muscular activity; at the moment of actual death, the muscular functions act for the last time, without guidance or aim, until the vital principle is completely exhausted.

The system of experiment to which Mr. Brown-Sequard boldly (*audacieusement,*) submits the living organism, seems to us to have been dictated by analogous considerations to those we have enumerated, and the results which he has obtained, favor the opinion that cadaveric rigidity is but life manifested in its utmost or last limits.

Having at first incidentally observed that the parts affected with this *post-mortem* rigidity, (the assumed evidence of death,) may, under the influence of sanguineous injections, become again supple, and give signs of irritability, M. Brown-Sequard entertained this particular question, and, on varying his experiments, has arrived at the results which we are about to copy from him: In the dead bodies of rabbits and guinea-pigs, (which become rigid in from ten to twenty minutes,) he divided the aorta and cava, in the abdomen, just above the bifurcation of these vessels—that done, he put into the ends of these

divided vessels quills or tubes of glass, and by means of these he connected the vessels of the dead with those of the living animals of the same species, so that the blood of the latter was injected into the arteries and veins of the former, thereby establishing the circulation in the inferior limbs of the dead. This transfusion resulted in the removal of cadaveric rigidity in from six to ten minutes, and two or three minutes later, the limbs responded by motions excited through muscular nerves.*

It is then proved by these experiments, that the nerves and muscles which have lost their excitability, may have the latter reproduced by the influence of the blood, and even for a quarter of an hour after *post-mortem* rigidity had pervaded and ruled the muscles.

The same result was obtained by operating in another mode more simple and more easily repeated: A rabbit or guinea-pig was divided transversely on a level with the inferior borders of the kidneys—a ligature was applied on the aorta, which suppressed the vascular communication between the two sets of vessels; little by little the muscular activity declined in the inferior limbs, and was replaced, ordinarily, in less than half an hour, by rigidity. After having been abandoned to this state for fifteen or twenty minutes, the ligature was removed, whereupon the circulation was re-established, and then, as in the preceding case, rigidity was removed and excitability reappeared in the muscles and motor nerves.

Finally, in another series of experiments, M. Brown-Sequard investigated the voluntary motions and sensibility, with a view to ascertain whether they might not be re-established in limbs which, without having been separated from the nervous centers, could, nevertheless, be reduced to rigidity from the suspension of the circulation. With this view, he tied the aorta below the renal arteries, in vigorous rabbits; in less than ten minutes sensibility was abolished in the parts below, and in two minutes longer voluntary motion ceased; irritability still continued for nearly half an hour; afterwards rigidity took place, and was allowed to persist a quarter of an hour; at which time the ligature was removed, the circulation was restored, and, as had been expect-

*The exciting agent used, was as usual, electricity.

ed, the blood brought back voluntary motion and sensibility.

These new researches bear out the following conclusions:

"1st. That rigidity in the cadaver does not prove that the muscles are dead.

2d. That the motory and sensory nerves lose in the limbs all power to act where there is no circulation, but recover their functions from the action of the blood.

3d. That the limbs of mammiferous animals, after having been kept for fifteen or twenty minutes in a state of rigidity analogous to that in dead bodies, can be restored to their normal state, that is, to irritability, sensibility, and voluntary motion. LEON FOUCAULT."

The following account, translated by an individual unknown to us, is evidently a continuation of the experiments of M. Brown-Sequard, though the name is spelled differently. We correct the orthography in this particular.

"On the 18th of June, at eight o'clock in the morning, an assassin, condemned to death for murder, was executed at the Barrier St. Jacques. His headless body was given to a celebrated physiologist, M. Brown-Sequard, for the purpose of trying an experiment on the transfusion of blood. He had, in operations upon animals, noticed that the muscles which were just becoming rigid, seemed to resuscitate under the influence of fresh blood injected into the veins. The dead body preserved its muscular irritability until seven in the evening, when the stiffness, always consequent on death, seized upon the whole muscular system. As it was too late to obtain blood from the hospitals, and as that of animals seemed to promise but little success, M. Brown-Sequard caused an assistant to make an incision in his arm, from which he took about half a pound of blood. This was passed through a linen cloth, and injected into the radial artery of the subject, a little above the wrist. The corresponding vein was opened, and the natural blood of the dead man, now perfectly black from want of oxygen, was made to yield its place to the the fresh blood injected. By continuing the injection, it passed through the capillary vessels, from the arteries to the veins, and flowed up through the orifice cut to al-

low the old blood to escape. Though it entered of a brilliant red color, it came out as black as the natural blood of the subject. But, being moved about in the air, it soon recovered its red hue, when it was again injected, to be still again disgorged by the open vein. In about half an hour the hand became sensitive, and moved convulsively under the discharge of an electric battery, which previously produced no effect. Out of the nineteen muscles of the hand, twelve recovered their natural irritability, or sensitiveness, and three of them contracted or expanded throughout their whole length. This state lasted from nine o'clock till midnight, when it began to yield to the rigidity natural to all bodies deprived of life. At six in the morning another experiment was tried, but neither the battery nor a fresh infusion of blood excited the least appearance of motion. The appearance seemed to decide, beyond a doubt, that in the human body, as well as in animals, the approach of rigidity may be deferred for a considerable period, by the injection of fresh blood, and that by the further application of electricity, the muscles may be made to move as in the living subject."

In another Journal, we have met with a statement showing that the French *savans* regard artificial circulation as restoring to the dead both sensibility and motion, in part, at least. But what is the test used to prove "this high argument?" Electricity! "Sous l' influence de cette circulation et au bout d'une demi-heure, la main du supplicie, par une sorte de resurrection partielle, *redevint sensible et s'agita aux chocs reiteres des decharges electriques.* Cependant tous les muscles ne se montrerent pas egalement *sensibles.*" (See 2d. *L'Illustration, Journal Universel*, Aug. 14th, 1851.)

The fundamental propositions advanced in the above report, so far from being original and altogether new, are comparatively old. It is now half a score of years since Dr. Bennet Dowler, of New Orleans, not only investigated experimentally, and preoccupied the grounds recently taken by the French *savans*, but a vast deal more, without the aid of electricity, (vulgarly called thunder and lightning.) He has not restricted his experiments to the inferior animals, as dead guinea-pigs and rabbits, (used by the French physiologists,) nor wholly to vivisections, but has experimented on hundreds of men, women, and chil-

dren, without the all-powerful, but unphysiological forces generated by electrical batteries.

The general views of life and death presented in the above report, were long since brought forward in Dr. Dowler's essays on contractility, animal heat, capillary circulation, natural history of death, and, in other papers, with copious experimental illustrations. His ideas, and terms, (so far as the two languages will allow,) seem to have been adopted by MM. Foucault and Brown-Sequard, as novelties.

It is unnecessary to allude to Dr. Dowler's vast collection of unpublished researches upon these subjects. Soon after his experiments began, he published various extended monographs with experiments illustrative of the duration, degrees, progress, renewal, and decline of contractility and muscular motion, including the conditions that might be supposed to influence the muscles, as the nerves, the blood, hemorrhages, the temperature, rigidity, diseases, and under the most varied manipulations and modifying circumstances. The reader and the French savans have only to look into Medical Journals of Louisville, New York, New Orleans, and of other cities at home and abroad, to be convinced that the news from Paris is old, ("*trop tard*,") and that Dr. Dowler's claims to priority of discovery are entirely indisputable. It is now more than five years since Dr. Dowler, (as he informs us,) forwarded a number of copies of a pamphlet of 39 pages, ("Experimental Researches on the post-mortem Contractility of the Muscles,") to several members of the Academy of Medicine, and of the Academy of Sciences. Indeed, Dr. Dowler's discoveries in the muscular functions must have been known as early as the 5th of August, 1843.—We have now before us a letter addressed to Dr. Dowler from the illustrious Louis, which we are permitted to use, and of which we will give a translation, showing that Dr. Dowler's paper entitled "Post-Mortem Researches, had been received in that city more than eight years ago.—Now, in this very paper is announced Dr. Dowler's discovery of the excitation of post-mortem contractility, by percussion, as well as several other discoveries, as post-mortem caloricity, post-mortem circulation, capillary action, etc., etc.

[TRANSLATION.]

Sir and honored confrere:—I know not how to thank you sufficiently for the extreme kindness with which you honor me, in addressing to me the two pamphlets which you have printed; one on pathological anatomy, and the other on what you call sun-stroke.

As to the subject of pathological anatomy, you have done, without doubt, that which no other physician has done till now; for it has been given to no person to make post-mortem examinations a few minutes only after death, when cadaveric rigidity (one of the most certain signs of death,) exists, as yet to no great degree. You have been able to see that which few persons have seen—to establish lesions susceptible of changing quickly; and, if you have been able to collect in detail, and until the last hour of the patients, the symptoms which they have experienced, you will do a thing very useful to science to publish what you have seen.

As to what you call sun-stroke, the medical public cannot but read with a great deal of interest what you say, and, for my part, sir and honored confrere, I dare require you to pursue your researches, in order to have complete certainty that the facts observed by you, or rather the deaths of which you speak, are truly connected with the consequence of the insolation.

Permit me, in conclusion, to persuade you to continue your valuable labors, to study rigorously the facts which you have collected, as you yourself propose. Have enough confidence in yourself to make them known to the medical public, to whom they will be serviceable, and please accept,

Sir and honored confrere,
The assurance of my grateful
and devoted sentiments,

Paris, Aug. 5, 1843. LOUIS.

Dr. Dowler's method (percussion,) and results are alike original. Physiologists had used, and they still use electricity as the means of exciting muscular action! an agent of great power—one that produces irregular and convulsed motions in dead animals. Sir Charles Bell himself admits that results thus obtained are fallacious:

"for the nerves, dead or alive, may convey the galvanic power, like a wet cord."*

It is unnecessary to reiterate in this Journal the results of Dr. Dowler's researches upon these subjects. It is sufficient to say that he has shown that the muscular force may be repeatedly excited, exhausted, and regenerated for many hours, and even after the appearance of post-mortem rigidity, without electricity, and after the removal of the nerves and blood. Cadaveric rigidity is often readily removed by art; and then, in many cases, muscular contractions will follow with perfect regularity, the cadaver raising his arm from the floor to his breast, carrying weights in his hand—after, as well as before the removal of the brain, cord, nerves, and blood.

The French savans have doubtless been deceived, as well in the nature as in the originality of their experiments. They had exhausted, temporarily, the muscular by the electrical force; they then set about injecting the blood-vessels with fresh living blood; in the meanwhile, the regeneration of the muscular force had been progressing, and had the operators injected no blood whatever, but delayed for an equal period, contractility would have returned; for the amputation of a limb, and the removal of the blood and blood-vessels, will not in the least diminish the contractility, though in the living state, Dr. Dowler has admitted that the blood and the nerves may contribute as auxiliary to the inherent forces of the muscles, being rather the essential conditions than the essential agents of motion, both voluntary and involuntary.

We venture to suggest another source of error into which the French *savans* have probably fallen. They tell us that cadaveric rigidity having manifested itself in the guinea-pig, blood was thereupon injected, rigidity disappeared, and contractility returned. Now, we incline to think that it was the incidental manipulation of the animal, not the blood, that removed the rigidity; for Dr. Dowler's researches show, that in man, and in the alligator, how much soever they may be mutilated, rigidity may be, by forced motions, removed repeatedly, after which contraction can be excited for hours, and in the

*New Syst. 180.

latter for three days! The rigidity will take place repeatedly, if the body be left perfectly undisturbed for a suitable time.

Dr. Dowler's researches prove that sensation and voluntary motion may exist independently of the brain.—The French experimentalists seem to show that both of these fundamental functions can be revived, for a time, by the transfusion of blood from the living into the dead, even after the *rigor mortis*. We wait for further proof, as the subject is not sufficiently ripe for safe speculation.

Let the French *savans* look at page 54 of the July number of this Journal, where they will see in Dr. D.'s last contribution, a summary statement of the principal laws of muscular contractility, cadaveric rigidity, etc., deduced from experiments commenced eleven years ago.

With respect to this last contribution of Dr. D., (so fundamental, not to say revolutionary, in its bearings,) we may remark, that, judging from sundry letters and from notices of the medical press, so far as we have seen its reception has been very flattering.

It has been urged as an objection to Dr. D.'s papers and essays, that they are not sufficiently practical in their spirit and bearing. To this we reply, that the writings of Hunter, Harvey, and some others, were looked upon by the less sagacious of their cotemporaries as of little practical utility at the time, and too speculative in their tone for the age; but the lapse of years and the researches of organic chemistry have established as indisputable truths many of these then supposed speculations, and mankind are at this moment receiving the benefits and blessings derived from the experiments of those illustrious minds. So, in like manner, we anticipate glorious results, at some future day, from the untiring labors and ingenious experiments of Dr. D.; and if we cannot apply to practical purposes—to the coining of money—the important discoveries in physiological science, which our confrere has from time to time published to the world, we indulge the pleasing hope that another generation will reap the full benefits of his labors, and render homage to his name.—*New Orleans Medical and Surgical Journal.*

Unconsolidated Fracture of the Thigh successfully treated by Acupuncture. By M. Lenoir.—The rationale of the various plans of treatment which have been adopted, in order to prevent the formation of false joints, consists in the establishment of an inflammatory action in the fibrous tissue, situated between the bony fragments, and the consequent secretion of a secondary callus. One of the methods proposed has, in the hands of its inventor, M. Malgaigne, been unattended with success: we mean acupuncture. But the following case, communicated to the Societie de Chirurgie, by M. Lenoir, proves that this mode of treatment deserves some notice, even although it has not afforded similar results to M. Maisonneuvre.—Much of the success obtained by M. Lenoir must, doubtless, be attributed to the many precautions observed by him.

Dupèchè, a carpenter by trade, aged thirty-three years, in falling from a height of fifty-two feet, fractured his right thigh. He was immediately conveyed to La Pitié, and placed under the care of M. A. Bérard. After fifty-four days of treatment, the patient began to walk with the assistance of crutches, when M. A. Bérard, in order to remove the stiffness which existed in the knee-joint, endeavored by force to extend the motions of this articulation; in one of these maneuvres the neck of the femur gave way, and the signs of the fracture re-appeared.—The broken bone was again reduced, and an immovable apparatus applied to keep the fractured ends *in situ;* at the termination of a month the apparatus was removed, but the fracture had not consolidated, and the patient had himself conveyed home.

Six months afterwards, M. Lenoir took him into the hospital for the purpose of employing the treatment by acupuncture; but before trying this plan, he used all the means likely to insure success, and amongst others, he had him placed on a mechanical bed, so as to maintain complete freedom from motion, even in attending to the calls of nature. As the fracture was oblique, and the upper fragment very sharply bevelled, and the fragments, by overlapping, occasioned a shortening of about two and a half inches, M. Lenoir had an apparatus, for maintaining extension, constructed by a carpenter, a friend of the patient. This apparatus consisted of a long box, nearly in

the shape of the limb, and consequently wider above than below, but longer than it; it was about three inches deep, and was composed of three pieces of light wood closely united to one another; of these three splints, the external was eight inches longer than the others, which terminated at the junction of the thigh with the trunk; this longer portion had at its upper end a mortise intended to facilitate the employment of counter extension; to the lower end of this groove a kind of toothed wheel and axel was adapted, to which was applied a catch for the purpose of fixing it. This apparatus, lined with carded cotton, received the limb, the foot being covered with a gaiter of ticken furnished with a foot-strap; by means of this strap rolled round the wheel, extension was maintained by another strap well padded, passing along the fold of the groin, having the ischium as its *point d' appui*, and its ends fixed in the mortise in the outer splint of wood.

For several days nothing was done except to tighten the straps according as they became relaxed. At last, on the 12th of August, seven months and some days after the accident, M. Lenoir proceeded to insert the needles. At first he introduced four, each being four inches long, and furnished with a head. Their points were directed along the inner surface of the upper fragment, from below upwards; an interval of but half an inch being left between each needle. Contrary to his expectation, and although he passed them in as far as the heads, he met with no obstacle to their introduction. This, doubtless, depended on the existence of an interval between the two fragments, the extension effected by the apparatus having reduced the fracture only in the direction of the length of the limb, and not transversely. The four needles remained *in situ* for six days; at first they excited redness of the skin, then a little pus appeared about them and rendered them moveable, and finally, a slight swelling occurred. These symptoms indicating that inflammation had developed itself, M. Lenoir withdrew the four needles; and, after having cleaned them, he re-introduced them higher up, following carefully the direction of the upper fragment, and leaving between them the same intervals as before. The same symptoms followed this second operation; at the end of five days the needles had become moveable, and were taken away; and the inflammatory

action now appearing to be sufficient to produce union, the introduction of the needles was not repeated. The inflammatory swelling of the limb was treated by poultices, antiphlogistic diet, and cooling drinks; and when it was subdued, the two surfaces of the fragments were brought into closer proximity by means of small splints placed around the thigh, and tightened by two straps of leather, a practice previously employed by Amesbury.—The apparatus was inspected daily, and tightened when necessary. At the end of twenty-three days, in order to ascertain how far consolidation had advanced, the limb was completely uncovered; it was found to have neither got out of shape nor undergone retraction; but when the hand was passed over the seat of the fracture, it still yielded; splints were immediately re-applied, the limb was replaced in its groove, and extension continued. No fresh examination was made until the expiration of thirty-five days from this time, and then the callus was found to be sufficiently solid to justify the removal of the entire apparatus. Carefully measured, the limb was found to be rather less than eight-tenths of an inch shorter than that of the opposite side; the knee-joint was stiff, but the patella was still capable of transverse motion; the thigh and upper part of the leg were edematous, but otherwise there was no apparent deformity at the seat of the fracture, and the callus was not very bulky. Lastly, the coxo-femoral articulation was capable of motion, and the patient was able to raise the limb by the unaided action of the muscles. As an additional security, he was advised to keep his bed, and, during a fortnight that he was confined to it, the edematous swelling of the limb was treated by fomentations of aromatic wine, and by bandaging. At the end of that time he got up and walked, at first with the aid of crutches, and afterwards of a single stick; finally, he left the hospital cured, and M. Lenoir subsequently ascertained that on his return to his native district (Auvergne,) he had, during the entire following autumn, driven a plough, and that he now experiences no difficulty in the pursuit of field labor.—*Dublin Quar. Journal, from Bulletin General de Therapeutique,* Dec. 15, 1850.

A Bilobed, or Sacculated Bladder. By Thomas J. McKie, M. D., of Woodlawn, S. C.—March 25th, 1851.—Isaac, a negro man, æt. 60 or 65 years, a common field hand, applied to me, complaining that he could not void his urine except in very small quantities at long intervals. Upon examination I found that he had had occasional attacks of this kind for six or eight months past, lasting variously from three days to a week; though without impairing materially his general health. He stated that he had always relieved himself, until now, by drinking freely of water-melon seed tea, without troubling his owner.

Previous to the origin of these attacks, he had been a remarkably healthy negro, notwithstanding he had exposed himself to every vicissitude of weather; having in his younger days, been a great runaway.

In his right groin he bore one or two large cicatrices which he said was the result of an injury received when a small boy; farther particulars of these scars he did not give, nor could he call to mind any other injury received since, to which his present distress might be attributed.

He was not subjected to any treatment previous to my seeing him, not making much complaint, and using his favorite tea (as stated) with never-failing relief. Acting upon this suggestion, I gave him more active diuretics; but with marked increase of suffering. Anti-spasmodics were then tried with no other effect than a partial relief of pain. Emetics were not more successful. By this time, the hypogastrium, and even the region of the umbilicus were made prominent by the greatly distended bladder.

An attempt was now made to introduce the catheter, but after several trials it was entirely unsuccessful. The silver, as well as different sizes of gum-elastic catheters were used.

His pulse soon becoming very full, and bounding, he was freely bled from the arm, which gave great relief, with passage of small quantities of urine. Patient seemed to be improving slowly for three days; pulse was more natural, and he voided a few drops of urine once or twice in twenty-four hours. About the end of the third day, patient's condition seemed to be getting worse again, when an examination was made by the rectum, and the

prostate gland was found so enlarged as almost to prevent the passage of fecal matter, except in a very fluid state.

Under the circumstances, thought myself justifiable in attempting to force a passage through the substance of the gland with the common silver catheter; but as in the previous attempt at introduction, I was unsuccessful.—The bladder still continued distended to its farthest limits, being partially relieved once or twice in twenty-four hours by the escape of a few drops of apparently healthy urine. Gave ext. hemp, acet. morphia, and ext. hyosci. alternately to alleviate pain, which was extreme, particularly in the afternoon and night, he always suffering much less in the morning.

March 29th. Patient began to decline very rapidly, vomiting almost incessantly, (and without any seeming effort) a matter very like urine in appearance, only of more consistency; pulse remained rather frequent, with nearly natural skin, and a perfectly clear head.

At 3 o'clock, P. M., I very reluctantly punctured the bladder above the pubis, with a common flat trocar, without previous incision. A considerable quantity of healthy urine escaped, which gave the patient great relief, so that he rested well through the night.

30th. Patient apparently better; has no pain, though he sighs very often, and is troubled with hiccough; is not restless, has some appetite; water still dripples through the opening in the abdomen; bowels moved naturally: at night gave one and a half grains ext. hemp, with five of ext. hyosciamus.

31st. No perceptible improvement since yesterday; passed healthy urine per vias naturales; opening in abdomen allowed to close. Gave eight grains ext. hyosci.

April 1st. No change, only makes a greater quantity of urine than usual. 2d. Patient the same. 3d. Grows more feeble, allowed him bread and wine.

April 4. Patient is still weaker, but does not complain of any particular pain, nor has he since being tapped, though he still continues to sigh very often.

P. M. Isaac is much worse, is evidently sinking fast. Before this change, he passed a large quantity of urine, which I mistook for a favorable indication. Death seems inevitable. April 5th. At 5, A. M., patient died, after a sleepless night; he remained perfectly conscious of all

around, and of his approaching end, till a few minutes before his death. At 2, P. M., made a post-mortem inspection. Introduced (without the slightest difficulty) the catheter, and drew off a large quantity of healthy urine. Made an incision along the linea alba, and another across it reaching from the right to the left lumbar rigion. The bladder was situated high up in the pelvis, and very strongly bound by extensive unnatural adhesions, to the parts adjoining. On dividing the wall of the bladder, it was found much thickened, and the inner coat covered with spots of effused blood, varying in size from a mustard seed to a large pea. The bladder itself was composed of *two distinct cavities* connected by a round opening about the size of the point of a finger. The larger one, or bladder proper, was situated in front and rather above the other, and was the one into which the ureters entered, as well as from which the urethra arose. The smaller one was situated behind and rather to the left, and was about one third the size of the other, of much thinner walls, and having but few muscular fibres, which seemed to be sent off from the larger one, consequently possessing but little power of contracting itself; a power which the other, or a larger, seemed to possess in an eminent degree.

The ureters were much dilated; the kidneys were also found extensively diseased, being much softened and entirely covered by a substance nearly resembling coagulated blood, but of firmer consistence, and about half an inch in thickness, extending on both sides far down the psoas muscles, to which it was attached, as well as to the small intestine and to the side of the abdomen.

Disease of kidneys was never suspected; the whole trouble having been charged entirely to the prostate gland, which I think was the principal cause of this anomalous case.

This singular bladder must have been the result of injury received by the patient when young, which ruptured its external coat; the dilatation of the internal, I suppose has increased with his years, particularly during the six months previous to his death.—*Charleston Med. Journal and Review.*

Chloride of Sodium as a Substitute for Sulphate of Quinine, in Intermittent Fever.—Our readers doubtless remember that this substance was proposed some time ago, by Dr. Piorry, of Paris, as a remedy in intermittent fever, in evidence of the utility of which a large number of cases were adduced by him. He administers it in doses of two tablespoonsful once or twice daily, and asserts that it not only promptly arrests the paroxysms, but also exerts on the spleen as marked an influence as quinine does.

Professor Herrick, of Rush Medical College, has reported in the September number of the N. W. Medical and Surgical Journal, the results of several trials made with it, which go to corroborate the success obtained by M. Piorry. Prof. Herrick suggests that it acts by preventing the destruction of the blood globules (which takes place to a considerable extent in this disease,) and at the same time by furnishing the materials for the manufacture of a fresh supply of this constituent. Chloride of Sodium is known to possess the property of preserving the blood globules; it is an alterative and tonic, and is also claimed to possess a specific influence in arresting the exacerbations of intermittents.

He prescribes it in the dose of three to four drachms twice daily in mucilage. After the fever is checked, he gives it in smaller doses, say ten grains, with the same quantity of carb. ferri, twice or three times daily, as a tonic and corrective of the secretions of the alimentary tube.—*Ibid.*

Without any experience in regard to the febrifuge powers of the chloride of sodium, we can speak with great confidence of its efficacy in habitual constipation. Of all the laxatives we have ever tried, we have found this to act most pleasantly, uniformly, and naturally. Where the only object is to dislodge the contents of the lower bowels, it is all that physician or patient could desire.—Dyspeptics, sedentary persons, the subjects of hemorhoids, all, in a word, who are troubled with costiveness, will find the remedy a mild and sure eccoprotic, emptying the bowels freely without nausea, irritation, or exhaus-

tion. We direct it to be taken before breakfast, from two to three drachms, dissolved in two or three tumblers of cold water. The same dose continues to act from year to year, without diminution of effect.—[*Eds.*

Medical Properties and Uses of the Cimicifuga Racemosa.—By E. M. Brundige, M. D.—As an article of the Materia Medica, this plant is of comparatively recent introduction, and its medical properties seem hitherto to have been imperfectly investigated. Mild tonic virtues have been ascribed to it as well as the property of exciting the secretions of the skin, kidneys, and bronchial tubes.—Emetic and cathartic operations are likewise said to have been produced by it, but I have never observed these effects; perhaps, because my doses have been too small, or the preparation chiefly used has been the alcoholic, and not the proof spirit tincture. Alcohol takes up from this root very little coloring matter, and perhaps it rejects something upon which its emetic properties depend. But of its narcotic principle it is a perfect solvent. The therapeutical effects that have been ascribed to this, in my opinion, would receive a ready solution on the supposition that it acts only as a narcotic. That it possesses this property to a considerable degree, can scarcely be doubted. It is a stimulant narcotic, in over doses producing vertigo even to falling, from which the patient soon recovers. When any tendency to cerebral plethora exists, it is one of the worst remedies that can be used, never failing to increase headache and vertigo. In the disease depending upon innervation, it is one of the best remedies. It is a very prompt and efficient remedy in many cases of atonic and irritable dyspepsia, in doses of ten grains of the powder three times daily. If it has proved decidedly useful in pulmonary cases, as has been asserted, it has probably been when the lung affection depended on irritation in the digestive organs. Its curative effects in subacute and chronic rheumatism are unquestionable. In the treatment of this complaint, as well as in neuralgia, it is often advantageous to combine with it as much colchicum as may be required to keep up sufficient action of

the bowels. The tincture of hyosciamus has been added with happy effect in cases of rheumatism, attended by unusual pain and irritation. A liberal application of the tincture to the surface, both in rheumatism and neuralgia, has been found very useful. Internally, the powder should be administered in twenty grain doses, three or four times a day. The quantity may be increased if necessary. In chorea, I have not seen it tried, but should expect it to exert a controling influence. Parturient properties have been ascribed to it, and not without cause. As a means of increasing uterine action, it is far less energetic than ergot, but often a better remedy, since the energy with which ergot acts is frequently an objection to its use. In cases requiring but moderate aid, a teaspoonful of the tincture, given for two or three successive half hours, will, in a short time, excite steady and efficient action, which usually lasts till delivery. As a means of detecting false labor pains, it is very valuable, as it soon arrests them, restoring to the patient comfortable and healthy feelings. The frequent vomiting often so annoying in parturition is immediately relieved by it, while the uterine action is increased.

The foregoing are, I believe, about all the purposes for which this article has been used, and are of themselves of sufficient importance to establish its character as a remedial agent. I am now about to present it in a new and far more interesting light, and to state facts to show that, in the treatment of one disease at least, it possesses most extraordinary powers.

I have been accustomed to see this remedy applied to the inflammatory diseases of the eye of the horse, as well as to inflammations in other parts, from early youth, with the most complete success, the inflammation subsiding in from twenty-four to forty-eight hours. In these cases, the decoction was used, the parts being kept constantly wet with it. Dr. Close, of Portchester, with whom I studied, first applied it to the human eye, and to him I am indebted for valuable statistics.

Ophthalmia, in its various stages and degrees, but especially in its recent and acute form, is the disease over which the cimicifuga has been found to exert an influence so decisive and so prompt, as to establish for it a claim of superiority over every other mode of treatment. By the ap-

plication of two or three drachms of the tincture to the region of the eye, the disease has been overcome in twenty-four hours. Cures just as prompt and complete have often been made, not rarely and in a few equivocal cases, but constantly, as often as the disease has occurred; and in its most aggravated forms. This has been done unaided by any other means, not even by a purgative, but solely by the application of this simple and apparently trivial remedy. To secure a result so desirable, a saturated alcoholic tincture of the dried root is indispensable. A weaker tincture will not succeed unless the quantity is considerably increased, and then the stimulus of the alcohol in sensitive persons is sometimes so great as to increase the disease, and thus prevent a cure. The proper quantity to be applied, when the inflammation is confined to one eye, is a drachm, and twice the quantity when both eyes are affected. It should be applied slowly and cautiously with a pencil brush, the eyelids being closed so as to prevent, as far as possible, the liquid penetrating between them. Should this occasionally happen, the temporary smarting will not be followed by any unfavorable effect. The brush, when first charged, should be applied to the edge of the hair, at the greatest distance from the eye, passed entirely around it, approaching nearer as the fluid becomes exhausted, and finishing over the eyelids. This course should be repeated until the liquid is all applied, suspending the process now and then to afford the skin time to dry. The application should never be hurried, nor the surface to which it is applied too limited, but should comprise the forehead, temples, superior maxillary region, sides of the nose and eyelids. Its application to so extended a surface is necessary, that all the nerves around the eye may be brought under its influence, and through their action on the blood-vessels, the circulation of the inflamed organ be restored to its normal state. In recent and not very severe cases, one application is sufficient, but in more aggravated cases, it should be repeated after a lapse of two or three hours, and occasionally may be required the second day. In chronic cases the application must be repeated for several successive days, although cases of five weeks' standing have yielded to a single application. In very old and especially chronic cases, the power of the remedy has been greatly enhanced

by being used in conjunction with the ointment immediately after. In cases attended with unusual pain and irritability, the addition of sulph. morph. four or five grains to the ℥j of the tincture will be found very useful. When the skin about the eyelids is very red and sensitive, with a tendency to excoriation, so that from the stimulus of the alcohol the application can scarcely be borne, dissolving tannin seven to twelve grains in the tincture, will immediately obviate the difficulty. The class of cases in which this remedy shows the most marked effect, is that in which the disease is of an acute form attended by great pain and intolerance of light. The first case to which this treatment was applied, was that of a little boy, who was lying in a darkened room with his eyes firmly closed, and unable to open them. On a forcible inspection, the sclerotic coat was seen gleaming through a flood of tears of a fiery red color. Extreme reluctance to submit so young a child to the usual treatment, induced the practitioner to try the tincture of cimicifuga, having previously witnessed its curative influences in some other forms of local inflammation. It was accordingly applied in the manner above described, and repeated in the afternoon.—On calling the following morning, the mother of the little boy was leading him about the yard, his eye entirely cured. Results as striking as this have followed every case when a proper application has been made. I have never yet failed in a single case. Dr. Close, in a practice of five years, gives only one case in which the disease resisted its influence, and that yielded to the remedy after the usual depletory treatment, and in the village where he resides numerous cases occur.

In the purulent form of ophthalmia, but one opportunity has occurred in which I have applied it. Four cases occurred in a family, contracted from a colored girl who came among them, partially cured, from Bellevue Hospital. Three of these yielded, in about a week, to the daily application of the tincture. The fourth was very obstinate, confining the patient to a dark room for three or four weeks, but gave way at last to blisters to the back of the neck, and quinine internally. During the whole of this period the pain and suffering were greatly relieved by the external application of the tincture, applied at any time when the pain became more aggravated.

Should any of my medical brethren be induced to try this mode of treatment, I must insist upon the observation of the precautions above pointed out, both as to the strength of the tincture and the mode of applying it, and I would especially caution them against leaving the application to the patient or his friend. A properly prepared tincture must be used, the root having been gathered within six months.

A case of neuralgia successfully treated by cimicifuga, will close my observations on the use of this article. A young lady had been suffering for more than two years with this disease in the third branch of the fifth pair, for which, early in the disease, a sound molar tooth had been extracted, because the pain always concentrated there.—The pain continued to return in daily paroxysms. The usual treatment was resorted to with but slight relief.—The last article used was the tincture of the cimicifuga, in doses of a drachm, three or four times a day internally, the same being applied externally, about the same number of times. In three weeks the pain had entirely ceased. Thirteen months afterwards, it returned on the opposite side of the face, and was effectually removed in a few days by the same treatment, no return of the disease having occurred for the last three years.—*N. Y. Medical Gazette.*

On Cod Liver Oil in Phthisis. By Dr. Walshe.—The following conclusions as to the value of the cod-liver oil are taken from the author's recent work on "Diseases of the Heart and Lungs." He states:

1. That it more rapidly and effectually induces improvement in the general and local symptoms than any other agent.

2. That its power of *curing* the disease is undetermined. I mean here by curing the disease, its power of causing, along with suspension of progress, such change in the organism generally as shall render the lungs less prone to subsequent outbreaks of tubercles, than after suspension occurring under other agencies.

3. That the mean amount of permanency of the good effects of the oil is undetermined.

4. That it relatively produces more marked effects in the third than in the previous stages.

5. That it increases weight in favorable cases with singular speed, and out of all proportion with the actual quantity taken; that hence it must, in some unknown way, save waste, and render food more readily assimilable.

6. That it sometimes fails to increase weight.

7. That in the great majority of cases where it fails to increase weight, it does little good in other ways.

8. That it does not relieve dyspnœa out of proportion with other symptoms.

9. That the effects traceable to the oil in the most favorable cases are: increase of weight, suspension of colliquative sweats, improved appetite, diminished cough and expectoration, cessation of sickness, with cough, and gradual disappearance of active physical signs.

10. That in some cases it cannot be taken, because it disagrees with the stomach, impairing the appetite (without itself obviously nourishing,) and causing nausea, or because it produces diarrhea.

11. That in the former cases it may be made palatable by association with mineral acid, and in the latter prevented from affecting the bowels by association with astringents.

12. That intra-thoracic inflammations and hemoptysis are contra-indications to its use, but only temporarily so. I have repeatedly given the oil within a day or two after cessation of hemoptysis, without any return taking place.

13. Diarrhea, if depending on chronic peritonitis, or secretive change, or small ulcerations in the ileum, is no contra-indication to the use of the oil; even the profuse diarrhea caused by the ulceration of the large bowel, is not made worse by it.

14. That the good effects of the oil are *cæteris paribus*, directly as the youth of those using it—a singular fact, which probably may one day (when the textural peculiarities of youth are better understood,) aid in giving a clue to its mode of action.

Compression of the Aorta in Uterine Hemorrhage. By M. Chai..y-H nore.—M. Chailly-Honore considers that

this practice is not resorted to so frequently as from its merits it deserves to be; and believes, that had it been employed in one or two cases in which transfusion has been lately performed, it would have rendered that *dernier resort* unnecessary, or would have enabled it to save life when employed. Rudiger employed compression so long back as 1797; but Ulsamer first advised its being applied through the wall of the abdomen in place of through the uterus. The practitioner, standing at the left side, passes his right hand between the uterus and intestines, seizes the vessel between the index and medius finger, fixing it firmly against the vertebral column, and pressing on his right with his left hand. If in thirteen cases in which this practice has been resorted to, half the women died, this arose from its being deferred until they were *in extremis*, and all other means had failed. To these cases M. Chailly opposes eighteen others, occurring in his own practice, and among which only one woman died, in whom also the application had been too long delayed. In some of these, compression was maintained for two hours without inconvenience. In the former series of cases the compression was delayed too long, and employed without rule, confidence, or patience. In the latter it was resorted to in time, and methodically continued. Of course the practice is not advocated as curative, but as a means of gaining time in an emergency, wherein time is everything.—*Brit. and For. Review, from Bull. de l' Academie.*

Case of Inversion of the Vagina coming on during Labor. By Dr. Lambert.—The patient was a laboring woman. During the last six months of her third pregnancy she suffered from prolapsus of the vagina whenever she was working at out-of-door labor. The swelling thus produced attracted her attention, but did not alarm her, as it disappeared when she lay down in bed.

When labor came on, the tumor again appeared between the limbs. The midwife in attendance finding the labor tedious, and ignorant of the nature of the case, recommended the woman to make the most of her pains, and ordered her a vapor bath. The only apparent effect of this advice was the increase of the tumor to double its

former size. When Dr. Lambert arrived, he found it projecting from the vulva, of the size of two fists, of a blueish-red color, round, wrinkled, and of considerable consistence. At its lower extremity was an opening through which the finger could be introduced to the os uteri.

Dr. L. recommended rest in the horizontal posture, with the pelvis a little elevated, cold applications to be made to the tumor, and slight pressure applied to replace it during the intervals between the pains. After considerable delay the tumor was reduced, and the woman delivered with forceps. She made a good recovery, and the swelling has never returned.—*London Monthly Journal, from Revue Med. Chir.*, April, 1851.

Study of Anatomy in Egypt.—At the time when Mahomet Ali was persuaded by Clot Bey to organize a school of medicine in Cairo, the old man consulted the Council of the Ulama, or learned men of the orthodox sects, in regard to the legality of dissecting human bodies, for the purpose of anatomical knowledge. They decided that it would be repugnant to religion. However, he said nothing, and gave directions to his surgeon to proceed. He had the united force of Musselman prejudices and Moslem bigotry marshalled against him; but he was the pillar that sustained the entire fabric of Egyptian government, against whose orders no one dared raise the voice of remonstrance, however much they might growl over an infraction of the Koran. He lived long enough to have his bigoted subjects become familiar with dissections, and till the four orthodox sects of the Hanafees, Shafees, Málikees and Hambelees, had lost their influence over the ignorant rabble of the metropolis. Anatomical pursuits are now conducted there on a proper scale, and under fewer restrictions than in several of these United States, where a physician and surgeon are required to understand anatomy in order to practice, and yet they are liable to prosecution, to fine and imprisonment, for doing precisely what they are required to do. Mahomet Ali was in advance of the age in his dominions, and far wiser and more liberal than some of the enlightened Christian legislators of these United States.—*Bos. Med. and Surg. Journal.*

THE WESTERN JOURNAL.

THIRD SERIES.—VOL. IX.—NO. I.

LOUISVILLE, JANUARY 1, 1852.

OUR JOURNAL.

With this number commences the twenty-fifth volume of our Journal, which, if to the term of its existence here be added the twelve years it attained under the same name in another city, and under the direction of one who was for a long time its senior editor in this, is one of the oldest medical journals in our country. Twenty-four years is no mean age for such a work to reach in our Republic.

At the beginning of a new year and a new volume, it is fitting that we should return our thanks to our friends for the support which many of them have given to our enterprise from its inception, and in doing so we cordially express our best wishes that the year may be one of success and happiness to them all, and that they may live to see the in-coming of many a new year.

In looking back over our editorial lives, while we are conscious of having performed an amount of drudgery not easily appreciated by those who have had no experience in such matters, and of having aimed steadily at advancing the true interests of our profession, we are far from feeling a spirit of pride, or any disposition to take credit to ourselves for what we have accomplished. On the contrary we are free to admit, that we have never been satisfied with our performance, and that our

Journal has constantly fallen far short of what, in our estimation, a medical journal in Louisville should be. Neither in matter, style, nor dress; neither as to scholarship nor science, as to literary excellence or mechanical execution, has it been worthy of the profession in our day or of the arts even in our own backwoods. Long ere now we had hoped to have effected a decided improvement in, at least, the smallest of these particulars; but another year has come and finds us as far as ever from the high standard to which we have been aspiring. But we do not despair. We are resolved to persevere in our efforts, and hope at no distant day to see our work issued in a style that shall do credit to the profession, and be worthy of more than the steady encouragement it has received from so many patrons.

It is a fact fact not to be disputed, that the medical profession in our country is advancing in scientific attainment—that the body of medical men in the United States, growing to be one of the most numerous in any country, is increasingly a reading, inquiring body. The medical journals should reflect the progress of the profession. Their readers have a right to expect in them, not only more accurate science and improved modes of practice, but riper scholarship and more literary taste. For ourselves, we can only promise our best endeavors. We have to rely upon our brethren engaged in practice for contributions of a practical character. If such of them as are our readers will generally give us their experience in what is passing under their eyes, we promise that our journal shall be more interesting and useful than it has ever yet been.—We must have contributors if our work is to improve. We hereby call upon our readers, one and all, to do something with their pens this year for their profession. Our numbers must appear at the appointed season whether contributions come or not. If matter is not furnished, the editors must produce it themselves; and oft-times their case is like that of the poor play-actor who, in the midst of the snow-storm he was representing, found his stock of white paper exhausted and was compelled to eke out his mimic tempest with brown.

Circumstances beyond our control have delayed the appearance of our present number. We hope we shall not have to apologise soon again for such an occurrence. If we can promise nothing better, we hope, at least, to be punctual hereafter.

INANITION.

Dr. London, of West Point, Tenn., in a letter some time since received, mentions an instance of prolonged inanition in a hog, which

deserves a place by the side of the one recorded by Martell. The unfortunate animal, according to Dr. L., became confined between the limbs of a tree—wedged in—and in this situation remained for ninety-six days in the autumn and winter of 1848—'9. During this period it had no food, but, it may be supposed, was pretty abundantly supplied with rain water. Its computed weight at the time that it became entangled was 190 lbs., and but 30 lbs. when released, so that it lost 160 lbs. in 96 days. The pig mentioned by Martell as having been inhumed by a slip from the cliffs of Dover, lived one hundred and sixty days without food, and was found to have diminished in weight in that time more than 120 lbs. The more rapid emaciation in the former case was doubtless induced by the exposure of the animal to the open air and the vicissitudes of the weather. The pig under the chalk cliff was effectually protected from these influences, having just a sufficiency of air to maintain respiration. Dr. Currie relates an interesting case of dysphagia, in which the subject being unable to take any food for a month, lost during that time 100 lbs. in weight. The patient complained very little of hunger; neither was he much disturbed by thirst except during the first days of his abstinence, and found that it was then always removed by a tepid bath Nutritious clysters were employed and seemed to support his strength as well as afford him refreshment. It is remarkable how little this patient suffered at any period of his inanition. "His nights," says Dr. Currie, "were quiet; his sleep sound and apparently refreshing." Towards the end of it he had very lively dreams, but all of a pleasant nature. "No man," remarks Currie, "ever perhaps approached death by steps more easy."

A child in this city died inanitiated about a year since, from closure of the esophagus, the result of swallowing a solution of pearlash. The obstruction was gradual, and the child lingered for more than three months. We had an opportunity in this case of remarking the fetid odor of which writers speak as emitted by the bodies of those in the last days of starvation. With this little sufferer, as with the patient of Dr. Currie, life ebbed so gradually away, that its mother was hardly aware of the moment when it ceased to breathe.

HEAT OF VEGETABLES AND ANIMALS.

After the experiments of John Hunter on the calorific function of animals and plants, it was generally esteemed a point settled in physiology, that life was incompatible with freezing—that to freeze was to kill them.

Late researches seem to render the truth of this conclusion doubtful, or rather to prove that this is untrue as to many plants, and a large section of the animal kingdom. The warm-blooded vertebrata are certainly destroyed by freezing, and the same is the fact with regard to many insects in their perfect state; but fishes and reptiles are often frozen with impunity. Prof. Kirtland, of Cleveland, has seen eels revive after having lain in a frozen condition for twenty-four hours. Prof. Lathrop, in the *American Journal of Science and Arts*, for this month, remarks, that "it is a fact well known to those who are accustomed to take fish, such as the common perch, the lake mullet, &c., from Lake Champlain in the winter, that these fish may be frozen perfectly solid and be transported many miles and kept several days, when upon thawing them out in a tub of cold water, they will be found to be alive and active. I find the same fact sustained in the case of the buffalo fish taken from the Rock river at this place." Sir John Franklin and other Arctic voyagers relate, that certain species of fish which are found imbedded in the ice of the polar regions, are restored to life when thawed. In a paper by Prof. Le Conte in the journal just referred to, it is stated, that "Hearne in his journey from Hudson's Bay to the Northern Ocean, found various species of frogs so completely frozen that their legs were as brittle as pipe-stems, and which resumed their natural movements when exposed to a genial heat." Hearne adds, that if the frogs be frozen a second time they invariably perish. The same traveler found grubs, and spiders in a frozen condition, with similar recuperative powers on exposure to a warm atmosphere. Carpenter, in his General and Comparative Physiology, quotes numerous instances of a like character; as of "caterpillars so frozen that when dropped into a glass they chinked like stones, but nevertheless revived" on being thawed. The following experiment was tried in Sir John Ross's voyage, and is conclusive on this point. Thirty larvæ of a caterpillar were put in a box and exposed to the winter temperature for three months; on bringing them into the cabin, every one of them returned to life and crawled about. They were again exposed to an atmosphere 40 deg. below zero, and instantly became re-frozen; after a week they were brought again into the cabin, and twenty-three returned to life. These were again exposed and re-frozen; and, after being solid for another week; eleven of them recovered on being brought into the cabin. A fourth time they were frozen, and only *two* of them recovered.

Prof. Le Conte has made observations on plants in a cold atmosphere and has arrived at results similar to the above. He has proved by numerous experiments that the cabbage, the rose, and many other plants

may be hard frozen without serious injury. But such facts are familiar to every observer.

As to the temperature-preserving power of vegetables, it is now proved, contrary to the conclusions of the immortal Hunter, that vitality is but little concerned in the process. If the interior of large trees is found to be warmer in winter than the external atmosphere, it is because the tree is in some degree protected by its integuments from the cold, and derives its sap from the comparatively warm soil below.

DR. DOWLER'S PHYSIOLOGICAL RESEARCHES.

Few American physicians have shown so resolute and persevering a spirit of research as Dr. Bennet Dowler, of New Orleans. For many years past he has been experimenting upon human bodies just after life had become extinct, and has elicited results of a very startling character. His observations as recorded amount to many thousand m. s. pages, and he is still pushing forward with the most praise-worthy zeal. Some of his earlier papers were published in our Journal, and he has since been an industrious contributor to several other journals.

We copy, under our head of selections, from the *New Orleans Medical and Surgical Journal*, a vindication of his claims to priority in certain views lately set forth by some French physiologists. We do this as an act of justice to our distinguished countryman, who is not only a man of true science and learning, but a gentleman of great amiability and moral worth. As has been the case in so many similar instances before, it would not be surprising if Dr. Dowler's discoveries had excited more interest everywhere else than at home, and should be more highly prized by future physiologists than they have been by his contemporaries.

DEATH BY LIGHTNING.

A boy was killed by lightning, at Jacksonville, Ills., in August last, under circumstances somewhat novel. He was in the act of passing from one house to another when struck, and was within fifty feet of the one he had left. It was in a part of the town thickly settled; there was a lightning rod on the house to which he was going, two hundred feet distant, but none on the one nearest him; there were no trees or high objects of any kind nearer than the houses. The only marks upon the boy were a few small spots on the forehead; his eye-brows and front hair were con-

siderably singed. His hat (a common straw hat), had a hole three inches in diameter knocked through the front crown; most of the straw was carried away, and around the edges of the hole *all the straws were pointing upwards.*

Prof. Coffin, who oommunicates the foregoing facts in the last numbe of Silliman's Journal, concludes, from the appearances of the hat, that the boy was killed by a *return stroke*, the electricity passing from one cloud to the other (there being two which approached in opposite directions,) and taking the earth and the boy in its circuit.

It is remarkable that this accident should have occurred in the open air in the midst of a town, and in this particular is perhaps unique. The houses West and South of the fatal spot are well supplied with lightning rods, and Prof. Coffin conjectures that the electricity might have passed silently from the cloud to the earth by these and accumulated at the very point where the boy was when killed.

LIFE INSURANCE EXPLAINED.

We have received the first number of a periodical, devoted to the explanation of Life Insurance. The importance of the subject, the deep interest which all should feel in it, and the necessity that exists for a thorough understanding of all questions connected with Life Insurance should command a great circulation for this new periodical. There are few, even of those who feel interest enough to take out a policy on their lives, who acquaint themselves with much more on the subject than the amount for which they insure, and the premiums that are to be paid on the policy. The questions connected with life insurance are varied in their character, and require to be well studied and well understood. For instance; there are two kinds of Life Insurance agencies. In one the premiums are required to be paid in cash; in the other, a portion is paid in cash, and a credit secured by notes, is given. Any man of sound reflection must see that there is a material difference between these two kinds of insurance. One must of necessity be much more secure and prosperous than the other. The same principle holds good in these Insurances that prevails in other things. A business based on a cash capital, other things being equal, must be more secure and prosperous than that which works upon credit. There are a great variety of causes that speak loudly of the superior advantages of the Insurance based on cash payments, but we have not time nor space to dilate upon them.

The periodical to which we have referred, is published in Philadelphia, bi-monthly, and will consist of a series of six lectures, at fifty cents, if paid in advance. The work is edited by M. L. Knapp, M. D., and, judging from one number of the work, the editor has ample capacity for his enterprise. We wish him a great deal of success in his laudable undertaking. B.

PRACTICAL CHEMISTRY.

From the following circular, it will be seen that an opportunity is offered to the young men in the West to acquire a practical knowledge of analytical chemistry, and we should hope there are not a few who will be inclined to profit by the excellent opportunity. There is a demand in our country for much more of that sort of knowledge than prevails, and those who make themselves thorough, practical chemists are pretty sure of finding profitable employment:

Laboratory of Practical Chemistry, under the direction of Professor B. Silliman, Jr., A. M., M. D., assisted by Mr. Geo. J. Brush.

Pupils are received in this Laboratory for instruction in Practical and Analytical Chemistry, assay of Ores and analysis of Minerals, Mineral Waters, products of the Arts and kindred subjects. The instruction in this Laboratory is entirely unconnected with the other operations of the University, but the pupils have the opportunity of following the Chemical Lectures given in the regular organization of the Medical Department. Students are furnished the use of glass, reagents and when sufficiently advanced with balances and other delicate means of research.—They can work during the whole day under the direction of the Assistant, whose whole time is entirely devoted to their progress and improvement. Daily instruction will also be given in some departments of Analytical and General Chemistry and in Mineralogy.

Cabinets of Minerals, Fossils, and other objects in Natural History will also be accessible.

This Laboratory is open from the first of October in each year until June.

Analysis of Ores, Minerals, Mineral Waters, products of the Arts, and cases of suspected poisoning will be executed with promptness and on reasonable terms.

For further information apply, by letter, to

PROF. B. SILLIMAN, JR., Louisville, Ky.

METEOROLOGICAL TABLE,
FOR THE MONTH OF DECEMBER, 1851.

Day of month,	Morning,	2 o'clock, P. M.,	Evening,	Mean temperature,	Barometer,	Rain-guage,	Course of wind,	Remarks.
1	29	47	35	37	29.15		e.	Variable.
2	38	41	40	40	29.38	08	w.	Cloudy.
3	31	33	32	32	29.38		n.	Do.
4	31	36	34	34	29.47		n. w.	Do.
5	29	36	30	32	29.55		e. n. e.	Variable.
6	20	49	39	36	29.56		s. s. w.	Do.
7	39	58	47	48	29.53		s. w.	Do.
8	52	50	47	50	29.37	06	n. w.	Cloudy.
9	32	39	36	36	29.55	04	calm.	Do.
10	35	37	35	36	29.19	46	n. n. w.	Do.
11	30	32	31	31	29.30		n. w.	Do.
12	30	35	35	33	29.10		w.	Do.
13	12	21	17	17	29.19		w. s. w.	Clear.
14	22	39	41	34	29.02	05	s. s. w.	Cloudy.
15	8	11	5	8	29.17	16	n. w.	Variable.
16	5*	11	8	5	29.34		w. n. w.	Do.
17	5*	11	11	6	29.31		swly.	Clear.
18	11	20	16	16	29.05		w. s. w.	Variable.
19	12	33	33	26	29.08		calm.	Clear.
20	19	28	23	23	29.18		n. n. w.	Variable.
21	20	24	22	32	29.18		n. e.	Cloudy.
22	22	29	26	26	29.24	20	s. w.	Do.
23	4*	24	10	10	29.50		calm.	Clear.
24	18	43	36	32	29.24		n. n. w.	Variable.
25	35	42	40	39	29.19	20	s. w.	Cloudy.
26	39	30	30	33	29.39	06	s. w.	Do.
27	37	53	51	47	29.16	10	s. s. w.	Do.
28	50	55	50	52	28.95	46	calm.	Variable.
29	40	64	61	55	29.10		s. s. w.	Do.
30	55	48	41	48	29.07	1.40	n. n. w.	Cloudy.
31	34	38	37	:6	39.11	64	n. n. w.	Do.
				31.6		3.91		

*Below zero.